

TWENTY-EIGHTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH

OF

SOUTH CAROLINA,

FOR THE

FISCAL YEAR 1907,

TO THE

LEGISLATURE OF SOUTH CAROLINA.

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1908.

STATE DOCUMENTS

TRANSPORTATION OF THE DEAD.

Attention is again directed to the frequent violations of the law regulating the transportation of the dead. The object of this law is to protect individuals and communities against the spread of infectious diseases by reason of improper preparation of corpses for transportation. But no fund is available for prosecuting violators of the law and no penalty imposed for the punishment of offenders. We urgently recommend that the law be so amended as to provide penalties for the lawbreakers, and that the State Board of Health be given a fund for the purpose of prosecution.

TUBERCULOSIS.

In recent years the fight against the spread of tuberculosis has occupied a large share of attention in all civilized countries. This disease is recognized as one of the greatest enemies of the human race and its suppression is, therefore, an economic problem of the first magnitude, and must claim the attention of legislators and publicists as well as that of physicians. Next fall the International Congress of Tuberculosis will meet at Washington, D. C. This will be a most distinguished gathering of scientific and practical workers from every part of the world for the discussion of the problem in all of its phases. The Board of Health earnestly hopes that the General Assembly will provide for an ample official representation at this congress whose objects are of such vital consequence to all.

SCHOOL HYGIENE.

The important subject of school hygiene, including the prevention of infectious diseases among school children, has claimed a share of our time, and a strong effort has been made to arouse the interest of the Board of Education and to secure their co-operation. It is proposed to distribute to teachers printed circulars of information concerning the general principles of hygiene, touching especially upon such diseases as tuberculosis, scarlet fever, measles, diphtheria, whooping cough, etc. These leaflets will not only serve to instruct teachers but may also be employed as texts for the teaching of hygiene in the higher grades of the public schools. We ask that the sum of \$250.00 be appropriated for the purpose of printing and distributing these circulars.

STATE HEALTH OFFICER.

Two years ago and again last year the State Board of Health urged that provision be made for the appointment of a State Health Officer. Such an officer unquestionably would be of material assistance to the Board of Health in the work of investigating outbreaks of epidemics and in instituting measures for their suppression. If a reckoning be made of the cost of disease and weath, it will easily appear that the expenditure necessary for the establishment of this office would be a measure of economy.

We trust that the General Assembly will again consider this matter and make the provision recommended.

WATER SUPPLY OF CLEMSON AND WINTHROP.

It has been brought to our attention that the drinking water of Winthrop College is regularly analyzed outside the State at considerable expense. We recommend that the Act of 1907 requiring the analysis of public water supplies by a chemist and bacteriologist approved by the State Board of Health be so amended as to provide for the bacteriological analysis of the water supplies of Clemson College and Winthrop College upon the same terms as those upon which analysis of public water supplies are made.

PRINTING EXPENSES.

For several years the State Board of Health has been required to pay for the printing of the Annual Reports out of the general fund appropriated for their running expenses. This has interfered seriously with their work. We recommend that the board be relieved of this burden and that the printing of the Annual Reports be charged to the fund appropriated for the State printing, as formerly.

Respectfully submitted,

ROBERT WILSON, JR., M. D.,
Chairman State Board of Health.

MEMBERS OF EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

EXECUTIVE COMMITTEE.

Robert Wilson, Jr., M. D.	Charleston
H. T. Hall, M. D.	Aiken
C. C. Gambrell, M. D.	Abbeville
J. A. Hayne, M. D.	Greenville
W. J. Burdell, M. D.	Lugoff
James Evans, M. D.	Florence
C. F. Williams, M. D.	Columbia
J. Fraser Lyon, Attorney-General	Columbia
A. W. Jones, Comptroller-General	Columbia
Dr. Robert Wilson, Jr., Chairman. Dr. C. F. Williams, Secretary.	
Pharmaceutical Member—Dr. W. W. Dodson, Laurens.	
Chemist and Bacteriologist to the Board—Dr. F. L. Parker, Jr.	
Charleston, S. C.	

STANDING COMMITTEES.

On Ordinances and Sanitary Code—Drs. J. A. Hayne, C. C. Gambrell, Attorney-General Lyon.

On Epidemic and Endemic Diseases—Drs. C. F. Williams, H. T. Hall, W. J. Burdell.

On Registration of Vital Statistics—Drs. Jas. Evans, J. A. Hayne, Comptroller-General Jones.

On Sanitary Condition of State Penal and Charitable Institutions—Drs. C. C. Gambrell, H. T. Hall, Jas. Evans.

On Sanitary Inspection of Schools—Drs. W. J. Burdell, C. C. Gambrell, J. A. Hayne.

On Local and Sub-Boards of Health—Drs. H. T. Hall, W. J. Burdell, Attorney-General Lyon.

On Pure Foods and Drugs—Drs. Robert Wilson, J. A. Hayne, W. W. Dodson.

SECRETARY'S REPORT.

ORGANIZATION OF THE EXECUTIVE COMMITTEE OF THE STATE BOARD OF HEALTH.

In compliance with Section 958 of the Revised Statutes, the State Board of Health at its annual meeting, which was held at Bennettsville April 16th, 1907, elected the following physicians to be recommended to the Governor for appointment as members of the Executive Committee; they with the Attorney and Comptroller-Generals to constitute the Executive Committee of the State Board of Health of South Carolina.

First District—Dr. Robert Wilson, Jr., Charleston.

Second District—Dr. H. T. Hall, Aiken.

Third District—Dr. C. C. Gambrell, Abbeville.

Fourth District—Dr. J. A. Hayne, Greenville.

Fifth District—Dr. W. J. Burdell, Lugoff.

Sixth District—Dr. Jas. Evans, Florence.

Seventh District—Dr. C. F. Williams, Columbia.

All of the above named members, together with the Attorney-General and Comptroller-General, met at the State House, Secretary of State's office, at 9:30 a. m. May 2nd, 1907, and after receiving their appointment proceeded to organize in compliance with Section 959, Revised Statutes.

Dr. Robert Wilson, Jr., was elected Chairman and Dr. C. F. Williams Secretary.

The meeting was then called to order by the Chairman and below will be found the minutes of this meeting and subsequent meetings for the year :

MINUTES.

Minutes of the last meeting were called for. Dr. Evans stated that on account of the resignation of all the members at Bennettsville there were no minutes.

Notes of correspondence were called for but none presented.

Appointment of the standing committees was next in order and the chairman asked if it was the wish of the board that these committees be now appointed. It was the unanimous expression of the board that the chairman use his pleasure. The chairman then stated

that, inasmuch as an occasion might arise calling for immediate attention by the Committee on Epidemic and Endemic Diseases that he would now appoint Dr. Williams chairman, and that the other members of this and the other committees would be announced later.

Dr. Hayne moved that the chairman of Committee on Epidemic and Endemic Diseases instruct county vaccinating agents to continue their work until June 1st and then suspend until October 1st, unless an occasion arose calling for vaccination. Seconded by Dr. Burdell and carried. Dr. Burdell stated that it was rumored that quite a number of cases of smallpox existed in Lee County, and made a motion that the same committee investigate conditions there. Seconded by Dr. Hall and carried.

Dr. Gambrell, vaccinating agent for Abbeville County, under the administration of the old board, presented unpaid claims against his county for vaccination and attendance upon smallpox cases and wanted to know what steps to take to collect claim.

The advice of the Attorney-General, who was present, was asked, and he said that the point in question had been covered by the full and exhaustive report of his predecessor, General Youmans, and that his opinion would add nothing. He advised that Dr. Gambrell enter suit against his county for the amount due him.

All Acts of 1907 relating to the Board of Health were read and discussed; the chairman was authorized by the board to carry out the provisions of the Act entitled "An Act to cede to the United States the title of this State to, and the jurisdiction of this State over, certain lands in Charleston, Beaufort and Georgetown Counties for quarantine purposes."

Upon motion of Dr. Hayne, seconded by Dr. Gambrell, it was also decided that the appointment of a chemist and bacteriologist to the board be left to the chairman. And inasmuch as the Act under which this appointment was made did not define the kind of examination to be made, he was requested by the board to have examinations made in accordance with his own instruction.

To carry out the provisions of the Pure Food and Drug Law it was moved that the chairman appoint a committee of three, with himself as chairman, to adopt such rules and regulations as may be necessary to enforce a strict compliance with the Act.

The prevention of disease was freely discussed by all the members present and it was unanimously agreed that the most practical solution of this problem is education. It was therefore resolved that the

Committee on Sanitary Inspection of Schools meet with the State Board of Education and lay before that body such resolutions as it deemed necessary.

The chairman read a letter from the Surgeon-General of the Public Health and Marine Hospital service requesting that this board be represented at the annual congress of the State and Territorial Boards of Health with his department in Washington on June 29th, 1907. Dr. Hayne moved that a delegate be appointed and that his expenses be paid out of the board's funds. Seconded by Dr. Gambrell and carried.

Dr. Williams was appointed.

Dr. Evans asked what disposition must be made of the library. It was moved that the matter be left with Dr. Evans and the secretary and that any expense incurred be paid by the board.

Vital statistics were discussed but no action taken.

There being no further business before it the board adjourned at 2:30 p. m. to meet on the second Wednesday in July, unless otherwise ordered by the chairman.

C. F. WILLIAMS, Secretary.

Subsequent to the preceding meeting the following standing committee appointments have been received and are hereto attached as a part of the minutes of the above meeting:

On Ordinances and Sanitary Code—Dr. Hayne, Dr. Gambrell, Mr. Lyon.

On Epidemic and Endemic Diseases—Dr. Williams, Dr. Hall, Dr. Burdell.

On Registration of Vital Statistics—Dr. Evans, Dr. Hayne, Mr. Jones.

On Sanitary Condition of State Penal and Charitable Institutions—Dr. Gambrell, Dr. Hall, and Dr. Evans.

On Sanitary Inspections of Schools—Dr. Burdell, Dr. Gambrell, Dr. Hayne.

On Local and Sub-Boards of Health—Dr. Hall, Dr. Burdell, Mr. Lyon.

Columbia, S. C., July 10th, 1907.

The regular quarterly meeting of the Executive Committee of the State Board of Health was called to order by the Chairman at 9:30 A. M., this date, at the Secretary of State's office, with the following members present:

Drs. Wilson, Hall, Gambrell, Williams, and the Attorney-General.

Dr. Dodson, the pharmaceutical member, was also present. The minutes of the last meeting were read and approved.

A letter from Dr. Burdell was read, stating that on account of illness he would not be able to attend this meeting. He stated that the Committee on Schools had met with the State Board of Education at a meeting of that body at Chick Springs and had made the following recommendations:

To the South Carolina State Board of Education:

First. We would recommend that the teaching of physiology and hygiene be made compulsory in the public schools of the State.

Second. We would recommend that all applicants for a teacher's certificate in this State be required to pass an examination on physiology and hygiene as a part of the regular examination for teachers. As many graduates of colleges are given certificates on presenting their diploma, we recommend that such applicants be required to show that physiology and hygiene were a part of the course at the college from which said applicants received the diploma. If these branches were not a part of the course, require the applicant to pass a regular examination on these branches.

Third. We would recommend that all of the colleges under the control of the State be required to teach physiology and hygiene as a part of the regular course.

Fourth. We would recommend that the book or books to be used as text books for the teaching of these branches bear the approval of the State Board of Health.

Fifth. We would recommend that the teaching of the means of preventing the dangerous communicable diseases be made compulsory in the public schools of South Carolina, and we recommend further that the book, now used as a school book, for the teaching of physiology and hygiene, be used for this purpose until the State Board of Health can prepare data.

Sixth. We would recommend that a physician be the teacher of physiology and hygiene in the high schools of this State where it is possible to obtain the services of one for this purpose.

Seventh. We would recommend that in arranging the courses for the State and county summer schools that a course of lectures on the means of preventing the dangerous communicable diseases be a part of this course.

Eighth. We would recommend that the State Board of Health shall name the diseases to be considered as dangerous communicable diseases.

Ninth. We would recommend that you use your influence to have the trustees of the school procure vision charts and have the teachers to inform themselves how to examine the children to see if their eyes and ears are normal.

Dr. Gambrell, the other member of the Committee on Schools, stated that they had been very much encouraged by the demonstration of interest on the part of the State Board of Education and that he believed that much good would result from the meeting.

A letter from Dr. Parker was read, in which he stated that some of the water supply companies had not complied with his request for samples. Others had not only not complied, but had retained sample bottles. It was moved that the Secretary notify all companies that samples must be sent to Dr. Parker within ten days after he had notified them that samples were wanted.

Unpaid claims of Dr. G. L. Martin of Greenville, one of the Board's vaccinating agents, was presented. After much discussion it was moved and seconded that the matter be left to a committee, composed of the Chairman, Secretary and Attorney-General, with power to act.

Unpaid claim of Dr. Dean was also presented. His claim was not itemized on account of his records having been lost. It was moved that if Dr. Evans, under whose administration the bill was made, would approve it, that Secretary be instructed to approve it also.

Upon motion the Secretary was allowed \$5 per month for rent for storing part of the library; he was also instructed to have suitable shelving made for its care and protection, the expense of same to be paid by the Board.

Verbal reports of all standing committees were made.

Dr. Wilson, Chairman of the Committee on Pure Foods and Drugs, stated that he had under consideration rules and regulations to guide the Board, in carrying out the provisions of the Act, but had not yet completed them. Would submit them at the next meeting so that they could be adopted before the law became effective. The Chairman called attention to the fact that under this Act an analyst had to be appointed. He was authorized to make the appointment and appointed Dr. F. L. Parker, Jr., for the remainder of the year.

There being no other business, the Board adjourned at 3 P. M., to meet on the second Wednesday in October unless otherwise ordered by the Chairman.

C. F. WILLIAMS, Secretary.

Columbia, S. C., October 9th, 1907.

The regular quarterly meeting of the Executive Committee of the State Board of Health was called to order by the Chairman at 9:30 A. M., this date, with the following members present:

Drs. Wilson, Hall, Gambrell, Burdell, Dodson and Williams.

The minutes of the last meeting were read and approved.

The regular order of business was suspended and Dr. C. T. Wyche, father of the Pure Food and Drug Act, who was present, extended the privilege of the floor. He made some very valuable suggestions and assured the Board that it had his co-operation in all matters looking to the betterment of the public health.

The Committee on Pure Foods and Drugs, consisting of Drs. Wilson and Dodson, presented the following rules to govern the Board in carrying out the provisions of the Act. All articles were adopted—Article 5 being adopted, subject to the approval of the Attorney-General.

Article 1. All articles of food or drink manufactured in the State for public sale shall bear some label or brand by means of which the manufacturer can be identified.

Article 2. The authorized Chemist of the State Board of Health shall purchase in open market the articles for analysis.

Article 3. If the sample is contained in a sealed package, two such packages shall be purchased, and if in bulk, it shall be divided into two equal parts, one package or portion to be retained for analysis and the other to be returned to the party from whom the purchase has been made, each package or portion being designated by the same sign or mark.

Article 4. The result of each analysis shall be forwarded to the Secretary of the State Board of Health, who shall preserve the same among the records of his office.

Article 5. The results of each analysis shall be published by the Secretary of the State Board of Health, in the Charleston News and Courier, Columbia State, and the Greenville News.

The Secretary presented a plan for the collection of vital statistics and to get physicians to report transmissible disease, and requested

the Board to authorize him to put same into effect. Motion was made and carried.

Dr. Burdell moved that the Secretary request all County Medical Societies to have at an early a date as possible public meetings for the purpose of educating the public in matters of sanitation and the prevention of disease. Seconded by Dr. Hall and carried.

The Chairman of the Committee on Epidemic and Endemic Diseases reported that since last meeting an epidemic of scarlet fever had occurred in the mill village just outside of Laurens, but was immediately stamped out. That there now exists in Greenville County and also Anderson County several cases of scarlet fever. That an epidemic of typhoid fever occurred at the village of Blaney, which was investigated by Dr. Burdell and traced directly to a polluted well.

The Committee on Penal and Charitable Institutions stated that an inspection at the State Hospital for the Insane had been made and that they found the institution in a very crowded condition and badly in need of more room. That no arrangements could be made whereby tubercular patients could be isolated. The committee requested the Chairman to urge, in his letter of transmittal to the Governor, such measures as would assist the Superintendent and Board of Regents in bringing about this great need.

The general sanitation of the institution was in excellent condition. The committee further reported that they had called at the State Penitentiary to see if any of the recommendations made, as a result of their former inspection, had been carried out, and was told by Superintendent Griffith that he realized the importance of the recommendations and would try to have them carried out in the near future.

The Chairman of the Committee on Schools reported that so far as he knew the State Board of Education had taken no action on the resolution presented by his committee to that body last spring. Dr. Burdell stated that he had taken up with his County Board of Education the examination of school children's eyes and ears by the teacher, and exhibited a test card now in use by Indiana Board of Health, which contained instruction to teachers how to proceed. If any defect is found, the child is given a card advising parents of the fact. It is the object of the committee to have the trustees of all the schools in the State purchase these cards.

Dr. Hall presented a claim from Dr. Harry H. Wyman, agent for the State Board of Health in Aiken County, for \$5.60 for vaccine

points which he had purchased and used in an epidemic of smallpox in his county, and for which he had not been reimbursed. It was moved that the account be paid.

A petition from Waverly was received requesting that a Board of Health be appointed in that town. Secretary was directed to appoint, as members, the names recommended in the petition.

At this meeting fourteen applicants for a license to embalm presented themselves for examination. Ten passed; four failed. The examination consisted of ten written questions and a practical demonstration on the cadaver.

There being no further business the Board adjourned at 3:30 P. M., to meet on the second Tuesday in December unless otherwise ordered by the Chairman.

C. F. WILLIAMS. Secretary.

Columbia, S. C., December 12th, 1907.

The regular quarterly meeting of the Executive Committee of the State Board of Health was called to order by the Chairman at 9:30 A. M., this date, at the State House, Secretary of State's office. The following members were present:

Drs. Wilson, Hall, Gambrell, Burdell, Williams.

The minutes of the last meeting were read and approved. Reports of standing committees were read and ordered published in the Annual.

The Chairman of the Committee on Epidemic and Endemic Diseases reported that the scarlet fever epidemic in the northern part of the State was on the wane, but that he was sure there were many infected houses which had not been disinfected. He was authorized by the Board to take whatever steps he deemed necessary to have this work done.

Special Committee on Pure Foods and Drugs reported, through its Chairman, that in the opinion of Attorney-General the \$1,000 mentioned in the Act was not available on account of its not being included in the appropriation bill nor no mention being made of it in the title of the Act, therefore, nothing had been done by his committee in carrying out the provisions of the Act.

Dr. Gambrell moved that an effort be made to have proper laws enacted regulating sanitation of public carriers.

It was moved that the Chairman appoint a committee of three to look after legislative affairs to be presented to the General Assembly at its approaching session. Drs. Williams, Burdell and Gambrell were appointed.

The Chairman's letter of transmittal to the Governor was read and approved by the Board.

It was moved that there be a call meeting immediately after the session of Legislature if necessary.

There being no further business the Board adjourned:

C. F. WILLIAMS, Secretary.

GENERAL REPORT.

The following report comprises the general health of the State, the routine work of the State Board of Health for the year ending December 31, 1907, together with its operations under the Acts passed by the General Assembly for the same period.

The Acts are here given for the convenience of those for whom this report is intended and the work done by the Board in carrying out the provisions of said Acts.

ACTS OF 1907.

NO. 296.

AN ACT TO CEDE TO THE UNITED STATES THE TITLE OF THIS STATE TO, AND THE JURISDICTION OF THIS STATE OVER, CERTAIN LANDS IN CHARLESTON, BEAUFORT AND GEORGETOWN COUNTIES FOR QUARANTINE PURPOSES.

Section 1. Be it enacted by the General Assembly of the State of South Carolina, That the right, title and interest of this State to, and the jurisdiction of this State over, the following described tracts of land, and land covered by water, situated in the Counties of Charleston, Beaufort and Georgetown, in this State, be, and the same is hereby, granted and ceded to the United States of America for the purposes of quarantine, to wit:

A1. A tract of land on James Island, Charleston Harbor, South Carolina, lying and being upon the easterly, southerly and westerly sides of the land, belonging to the United States Government, and known as the Fort Johnson Reservation, being ninety acres, more or less, and including the marsh land and tide flats east and south of said Fort Johnson Reservation to low water line.

2. The buildings now on said ninety-acre tract, consisting of one two-story frame house, about 40ft. x 35ft., known as the medical officers' quarters, with a 20ft. x 11ft. semi-detached kitchen and a one-story frame storehouse in the immediate vicinity, about 20ft. x

10ft. in size, and the lazaretto buildings, on Shell Point, consisting of a pest house, one story, frame, 15ft. x 30ft.; isolation hospital, one story, frame, 32ft. x 20ft., with a brick cistern in rear; keeper's house, one story, frame, 29ft. x 36ft., with 20ft. x 12ft. detached kitchen, and a small privy.

B. The Quarantine Station at Georgetown, South Carolina, on South Island, entrance to Georgetown Harbor, consisting of five acres of land, more or less, a residence and outbuildings.

C. The Quarantine Station, on Buzzards' Island, at the entrance to St. Helena Sound, consisting of ten acres, more or less, officers' quarters, two hospital buildings, and quarters for crew.

D. The Quarantine Station, on Paris Island, Port Royal Sound, consisting of fifteen acres, more or less, an officer's residence, two hospitals and outbuildings.

Sec. 2. That the State Board of Health be, and it is hereby, authorized and directed to convey said real estate to the said United States, together with all buildings and appurtenances thereto, and, also, all machinery, plant, boats, tools and other personal property used at or belonging to either, and all of the said tracts of land and Quarantine Stations, in consideration of the sum of money to be ascertained and fixed as follows: The value of the property to be assessed by a representative of the United States and the Chairman of the State Board of Health, or such person as he may appoint; and should these two differ, they shall have power to agree upon a third person, who shall act as arbitrator between the two.

Sec. 3. That, for the purpose of concluding the sale as aforesaid, the Chairman of the State Board of Health is hereby authorized and empowered to draw his warrant on the State Treasurer, for not exceeding thirty-five hundred dollars, to meet any expenses of survey, travel, recording papers, and so forth, as may be necessary to complete the same: *Provided*, The fund so used be returned to the State Treasurer immediately on the completion of said sale.

Sec. 4. That one-sixth part of the value, which may be assigned in such sale to the machinery, plant, boats, and other personal property belonging or appurtenant to the Quarantine Station in Charleston Harbor, when received, shall be paid over by the State Board of Health to the City Council of Charleston, in consideration of advances heretofore made by said city to the purchase and maintenance of the same.

Sec. 5. That this Act shall take effect immediately on the conclusion of the agreement between the representative of the United

States Government and the State Board of Health, as herein provided.

Approved the 19th day of February, A. D. 1907.

No. 248.

AN ACT TO PROHIBIT THE MANUFACTURE OR SALE OF ADULTERATED OR MISBRANDED OR POISONOUS OR DELETERIOUS FOODS OR DRUGS.

Section. 1. Be it enacted by the General Assembly of the State of South Carolina, That it shall be unlawful for any person to manufacture or sell, or offer for sale, any article of food or drug which is adulterated or misbranded, within the meaning of this Act; and any person who shall violate any of the provisions of this Section shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by fine not exceeding \$50 or by imprisonment not exceeding fifteen days for the first offense, and \$100 or thirty days' imprisonment for each subsequent offense.

Sec. 2. That the term "drug," as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary or United States Dispensatory for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animals. The term "food," as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed or compound.

Sec. 3. That for the purpose of this Act an article shall be deemed to be adulterated:

In the case of drugs and flavoring extract:

If, when a drug or flavoring extract sold under or by a name recognized in the United States Pharmacopoeia or National Formulary or United States Dispensatory, it differs from or does not conform to the standard of strength, quality or purity, as determined by the test laid down in the United States Pharmacopoeia or National Formulary or United States Dispensatory official at the time of investigation.

In the case of confectionery:

If it contains terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient

deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compaund, or narcotic drug.

In the case of food :

First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second. If any substance has been substituted wholly or in part for the article.

Third. If any valuable constituent of the article has been wholly or in part abstracted.

Fourth. If it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed.

Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application, applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this Act shall be construed as applying only when said products are ready for consumption.

Sixth. If it consists in whole or in part of a filthy, decomposed of putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

Sec. 4. That the term "misbranded," as used herein, shall apply to all drugs or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein, which shall be false or misleading in any particular and to any food or drug or product which is falsely branded as to the State, Territory or County in which it is manufactured or produced.

That for the purposes of this Act, an article shall also be deemed to be misbranded :

In case of drugs :

First. If it be an imitation of or offered for sale under the name of another article.

Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement

on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha, or beta encaïne, chloroform, cannabis indica, chloral hydrate, acetanilide, or any derivative or preparation of any such substances contained therein: *Provided*, That the package contains more than two grains of opium, or more than one-quarter grain of morphine, or more than one-quarter grain of heroin, or more than ten grains of chloral hydrate in one fluid ounce, or, if a solid preparation, in one avoirdupois ounce: *Provided, further*, That nothing in this paragraph shall be construed to apply to the filling of written prescriptions, furnished by regular licensed practicing physicians, and kept on file by druggists as required by law, or as to such preparations as are specified and recognized by the United States Pharmacopœia or National Formulary or United States Dispensatory, which are in accordance therewith.

In the case of food:

First. If it be an imitation of or offered for sale under the distinctive name of another article.

Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta encaïne, chloroform, cannabis indica, chloral hydrate, acetanilide or any other derivative or preparation of any such substances contained therein.

Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

Fourth. If the package containing it, or its label, shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients, shall not be deemed to be adulterated or misbranded in the following cases:

First. In the case of mixtures or compounds, which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accom-

panied on the same label or brand with a statement of the place where said article has been manufactured or produced.

Second. In the case of articles labeled, branded or tagged so as to plainly indicate that they are compounds, imitations or blends, and the word "compound," "imitation" or "blend," as the case may be, is plainly stated on the package in which it is offered for sale: *Provided*, That the term blend, as used herein, shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only, and *Provided, further*, That nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas except in so far as the provisions of this Act may require to secure freedom from adulteration or misbranding.

Sec. 5. That no dealer shall be prosecuted under the provisions of this Act when he can establish a guaranty, signed by the wholesale jobber, manufacturer or other party residing in the United States from whom he purchases such articles, to the effect that the same is not adulterated or misbranded, within the meaning of this Act, designating it.

Sec. 6. That for the purpose of carrying out the provisions of this Act the State Board of Health with one licensed druggist, to be appointed by the Governor upon the recommendation of the South Carolina Pharmaceutical Association, shall take cognizance of the interests of the public health, as it relates to the sale of food, drugs, spirituous, fermented and malt liquors, and the adulteration thereof, and make all necessary inquiries and investigations relating thereto, and for such purposes may appoint inspectors, analysts and chemists, who shall be subject to its supervision and removal. Within sixty days after this Act goes into effect, the said State Board of Health shall adopt such measures as it may deem necessary to facilitate the enforcement thereof. It shall prepare rules and regulations with regard to the proper method of collecting and examining drugs, articles of food.

Sec. 7. The sum of \$1,000 is hereby appropriated for the purpose of defraying the expense, if any, of analysis or examination of any article of food or drug as provided for in this Act; said sum to be expended under the supervision and direction of the State Board of Health.

Sec. 8. This Act shall go into effect six months after its approval by the Governor.

Sec. 9. All Acts and parts of Acts inconsistent with this Act be, and they are hereby, repealed.

Approved the 20th day of February, A. D. 1907.

No. 253.

AN ACT TO PROTECT AND SECURE THE PURITY OF THE WATER SUPPLY OF TOWNS AND CITIES.

Section 1. Be it enacted by the General Assembly of the State of South Carolina, That every water company, whether owned by private individuals or corporations or by municipality, shall have made, not less frequently than once in every three months, at its own expense, by a chemist, to be approved by the State Board of Health, a chemical analysis, and once every three months a bacteriological examination at its own expense by a biologist to be approved by the State Board of Health, of a sample of its water drawn from a faucet used for drinking purposes, packed and shipped in accordance with the instructions to be furnished by the Secretary of the State Board of Health, and the result of such examination shall be verified by a statement under oath of the chemist or biologist making the same, and published at least once in a newspaper published in the town or city using said water, within ten days after receipt thereof.

Sec. 2. For carrying out the provisions of this chapter, the State Board of Health is authorized and empowered to have the bacteriological examination made as hereinbefore provided for and to charge for the same the sum of five (\$5) dollars for each examination.

Sec. 3. As a check and as a guarantee of the faithful performance of the requirements laid down in this Act, the State Board of Health shall make, or have made by its authorized agents, such inspections of the water sheds and such chemical and bacteriological examinations of the public water supplies of the State as may be deemed necessary to insure their purity. Should such inspections or examinations show condition or conditions dangerous to the public health, the Secretary of the State Board of Health shall notify the Mayor, the municipal health officer and the superintendent or manager of the water works at fault, and demand the immediate removal of said dangerous condition or conditions. If at the end of thirty days after the service of said notice and demand, the said dangerous condition or conditions shall not have been removed to the extent

that due diligence could accomplish such removal, the said Secretary shall have printed in one or more of the local newspapers a plain statement of the facts for the information and protection of the citizens using the water: *Provided*, That nothing herein contained shall be construed to prohibit any municipality from imposing such additional tests and requirements as they may deem necessary, and the decision of the municipal authorities shall be supreme.

Sec. 4. Every water company, its managing officers and directors and the Mayor and Aldermen of every city and town who shall neglect or fail to comply with and carry out the provisions of this Act shall be guilty of a misdemeanor and punished by a fine not exceeding \$100 or by imprisonment not exceeding thirty days for each and every offense.

Approved the 18th day of February, A. D. 1907.

Acts 1 and 2 have been treated in the Chairman's letter of transmittal to the Governor and further mention is unnecessary in this report. What has been accomplished under Act 3 can best be seen by referring to the report of Dr. F. L. Parker, Jr., Chemist and Bacteriologist to the Board.

EPIDEMIC DISEASES.

None of the outbreaks of infectious diseases, save that of scarlet fever and typhoid fever, is deemed worthy of special mention. On July 19th I was instructed by the Governor to go to Laurens on account of an outbreak of scarlet fever in the mill village, just beyond the town limits. Upon my arrival I was met by Dr. Hughes, of that place, and conveyed to the office of Mr. Lucas, president of the mill. I was there informed that up to that time 11 cases had developed; all of a mild character. Mr. Lucas was very much concerned about the welfare of his operatives and said that he would have carried out all measures that the State Board of Health might institute. Upon consultation with Dr. Hughes the following rules were adopted and put into the hands of a trained nurse for execution under his supervision:

1. Tell the people what is confronting them.
2. Impress upon them the importance of calling in a physician for all complaints; for by this means you will probably run across some mild cases which would otherwise escape you, and which would be a very prolific spreader of the disease.

3. Place a placard by the door of each house infected, bearing the words, "CONTAGIOUS DISEASE HERE."

4. Fumigate all infected houses once a week—using formaldehyde, and continue process for at least six weeks.

5. Have all convalescent patients given a bi-chloride bath daily, and anointed with carbolized vaseline.

6. Do not allow any "gatherings" of any kind. Stop churches, Sunday schools, schools, baseball, parties, etc.

7. Insist on isolation, and use the most practical means of carrying it out.

Only six more cases developed. For the hearty and intelligent co-operation of Mr. Lucas we wish to acknowledge here the Board's sincere appreciation.

On the 21st day of September this office received a resolution from the Greenville County Medical Society requesting the State Board of Health to assist the Health authorities of Greenville to suppress an epidemic of scarlet fever then existing in Greenville, the mill villages just outside, and the County at large. In compliance with this request I went to Greenville the following day, and after a conference with Dr. C. A. Simpson, Health Officer of Greenville, and Dr. G. L. Martin, agent for our Board in that district, it was decided that active measures be at once instituted. Dr. Martin was instructed to take charge of all territory where local Boards of Health did not exist, and in order that he might be in a position to manage the situation to the best advantage, the following letter was addressed to every physician in the County:

Office of Secretary State Board of Health,
Columbia, S. C., Sept. 24, 1907.

Dear Doctor:

It has been brought to the attention of this office that a few cases of scarlet fever exist in the city of Greenville, the mill villages just outside, and the County at large, and the State Board of Health has received a request from your Medical Society that this Board co-operate with the City Board of Greenville in stamping out the disease.

To this end, Dr. G. L. Martin, of Greenville, our agent in Greenville County, has been put in charge. His supervision, however, does not apply to incorporated towns, where a Board of Health exists. You will please report at once all cases coming under your observation in his jurisdiction to him, and all other cases to the proper authorities.

Dr. Martin will in no way interfere with your treatment. His duties are purely hygienic—looking after quarantine, fumigation, etc., which he will fully explain if occasion arises.

Thanking you for the hearty co-operation which I am sure you will give, and trusting that “all is well” will soon be the sentinels’ cry, I am, and beg to remain,

Yours truly,

C. F. WILLIAMS, M. D.,
Secretary State Board of Health.

I regret very much to report that the request in the above letter was not complied with in all instances, and as a result many cases no doubt occurred which would have been otherwise prevented. The mildness of the disease has indeed made it a hard one to manage. Many cases have gone here and there spreading the disease and were not recognized until some sequelae developed. And as the disease was most prevalent among mill operatives, a migratory people, it is easy to understand how quickly it became widespread. The distribution of the disease can best be seen by referring to the table of epidemic diseases for the month of November. We are glad to report that the epidemic is on the wane and we hope in a very short time it will be entirely stamped out. An active campaign of disinfection is now going on, and it is the object of the Board to disinfect every house known to it to be infected. While the disease has been mild in character and few deaths resulting therefrom, *per se*, still many complications have arisen which will figure in our death rate for years to come.

Elsewhere in this report will be found the report of Dr. G. L. Martin, whose tireless and conscientious work during this epidemic is deserving of special commendation by the Board.

TYPHOID FEVER.

Typhoid fever has been prevalent throughout the State since early summer. This condition, however, is not confined to South Carolina, reports showing that it has been more or less prevalent in many sections of the country. During the year only three distinct epidemics have been brought to the attention of this office. One occurring at the State Hospital for the Insane, one at the village of Blaney, in Kershaw County, and the other in the Sharon section of Abbeville County—the last named are treated under reports of Drs. Burdell and Gambrell, who investigated them.

About the middle of June typhoid fever appeared among the patients of the State Hospital for the Insane. This office was notified and an investigation made. The origin of the disease was obscure, but the physicians of the Hospital are of the opinion that most of the cases arose from the "dead ends" of the city water pipes; since the disease was largely confined to the white women who used only the water from the city mains. This is no reflection upon the purity of Columbia's new water supply, since the supposed cause lay in the breakage of water pipes after the pressure was turned on, as well as the possibility of the new pipes being contaminated while lying upon the streets and in the drains before they were put into permanent position and properly leaded. Specimens of the water were drawn from the mains at the hospital and examined by the bacteriologist of the city water works and gas found, but he was unwilling to commit himself to the fact that colon bacilli caused the gas in these specimens; although such was his conclusion from the same result with specimens of well water drawn from the premises. The suspected wells were closed and spout water boiled as a precautionary measure. Upward of 50 cases occurred during the summer. Owing to lack of co-operation on the part of insane patients it is more than probable that a great many of these cases arose from contact.

In justice to Dr. Babcock and his staff, it gives us pleasure to state that every possible source of infection was sought for and every precautionary measure to suppress the disease taken.

Our State has been exceptionally free from the other epidemic diseases. During the year smallpox has prevailed endemically, but at no time has there been a widespread epidemic. This fact is unquestionably due to the active campaign of vaccination instituted last year. The work is still being carried on, but we have been greatly handicapped by the attitude many of the counties have taken towards the pay of our vaccine agents.

GENERAL HEALTH OF THE STATE.

As to the health of the State from the general diseases to which our flesh is heir, our Board is in position to speak only from its record for the month of November. Realizing that the vital statistics of a given community constitute the most definite index of the general health of such community during any stated year or series of years, the Board, at its October meeting, adopted a new plan for the collection of statistics. Heretofore effort after effort to collect

vital statistics has been made through the channels of local Boards of Health, but on account of lack of interest on the part of the majority, the effort was abandoned.

Under this new plan every practicing physician in the State is mailed at the end of every month a blank report to be filled out and returned to this office. By this means the Board will know at the end of each month the exact number of cases of contagious and infectious diseases which have occurred and will have a report of all deaths, with their causes. It will be readily noted that a record of this kind will be invaluable, not only to the Board and the physicians of the State, but the public at large. We will then be in a position to know where to direct our efforts and to see what is being accomplished thereby. It is hoped, and we believe, that for the year 1908, we will have a complete report from every physician in the State. We are giving elsewhere in this report our record for November; and while it is true the report is very incomplete, it is given with the hope that its value will be recognized and that it might act as a stimulus to those, who, not seeing it, would otherwise remain indifferent.

SANITARY INSTRUCTION.

At the first meeting of the Board the subject of sanitary instruction was freely discussed, and it was then decided that, under existing laws, more good could be accomplished in the year's work by an aggressive campaign along this line than in any other manner. With this end in view, it was resolved that our Committee on Sanitary Inspections of Schools appear before the State Board of Education at its annual meeting and present to that body such resolutions as they deemed best. Their resolutions and report on the meeting are embodied in the minutes of our second meeting. Much to our regret, no action has as yet been taken.

Pursuing this course further, the following letter was addressed to every county medical society in the State:

Office of Secretary State Board of Health,
Columbia, S. C., 18th Oct., 1907.

To the County Medical Society:

At a recent meeting of the Executive Committee of the State Board of Health it was resolved to urge upon the County Societies of the State the importance of uniting in an effort to extend sanitary knowledge among our people. That we have so often failed to secure the enactment of proper sanitary laws is largely due to sani-

tary ignorance. But "sanitary instruction is more important than sanitary legislation," for the prejudice that is always associated with ignorance may render a good law of no effect, as is shown by the difficulty the Board is now experiencing in endeavoring to enforce the present compulsory vaccination law.

The extensive prevalence of tuberculosis and typhoid fever is in large measure due to sanitary ignorance. Again, sanitary ignorance is often responsible for the spread of certain of the transmissible diseases of childhood, as well as for the defective development of many school children.

In order to remove as far as practicable this great obstacle to sanitary progress, the State Board of Health earnestly requests all County Societies to arrange at as early a date as possible one or more public lectures upon appropriate subjects, such as the "Suppression of Tuberculosis," "Typhoid Fever," "Smallpox," and other infectious diseases; "School Hygiene," etc.

The example has been set already by one or two County Societies, and it is earnestly hoped that all will join in making an aggressive and effective crusade of education.

Respectfully,
 ROBERT WILSON, JR.,
 Chairman State Board of Health.
 C. F. WILLIAMS,
 Secretary State Board of Health.

Some of the medical societies have already taken action, and we have every reason to believe that during the year 1908 many public lectures will be given instructing the public in matters of sanitation, and how to avoid disease.

Special attention is called to the excellent work done by Dr. Babcock and his staff on a disease known as pellagra. His report, found on page —, speaks for itself.

Attention is also called to a scientific investigation carried on in the South during the year by Dr. C. W. Stiles, of the Public Health and Marine Hospital Service, as to the cause of anaemia in the cotton mills, and many of the rural districts.

Dr. Stiles has proven beyond any question of doubt that this enaemic condition, seen in nearly all of the cotton mills of our State, and in many rural localities, is in a great measure due to an intestinal parasite known as the "hook worm."

The investigations now in progress, the details of which will be published later, have demonstrated that the disease is much more widespread than is generally assumed, and that it is of serious economic, as well as medical importance in connection with the labor problem in the South.

FINANCIAL STATEMENT.

The following is a statement of the expenditures of the State Board of Health for the fiscal year 1907, showing for what purpose, and to whom paid. All claims against the Board has been paid by warrant, drawn by Comptroller-General, this office filing a duplicate of each claim paid.

Receipts and Expenditures of the State Board of Health.

EXPENDITURES FROM STATE BOARD OF HEALTH FUND.

1907			
Jan.	17	Paid Dr. T. G. Simons, expenses to Legislature...	\$ 32 00
	17	Paid Dr. G. R. Dean, expenses to Legislature...	38 40
	28	Paid Postage, Secretary's office...	4 64
	31	Paid Secretary's salary for January...	41 67
Feb.	25	Paid Postage, Secretary's office...	5 17
	28	Paid Secretary's salary for February...	41 66
Mar.	25	Paid Postage, Secretary's office...	4 64
	31	Paid Secretary's salary for March...	41 66
	31	Paid Postoffice box rent...	80
	31	Paid Office rent, January, February and March...	25 00
Apr.	4	Paid State Company, for printing annual report...	204 72
	15	Paid Dr. T. G. Simons, meeting at Bennettsville...	39 00
		Paid Dr. A. A. Moore, meeting at Bennettsville...	30 80
		Paid Dr. G. R. Dean, meeting at Bennettsville...	52 20
		Paid Dr. Robert Wilson, Jr., meeting at Bennettsville...	39 40
		Paid Dr. W. H. Nardin, meeting at Bennettsville...	59 80
		Paid Dr. Jas. Evans, meeting at Bennettsville...	19 00
	16	Paid Secretary's salary to April 16th...	20 83
		Paid Office rent to April 16th...	4 16
	30	Paid Secretary's salary and office rent, April 15th to 30th...	25 00
May	2	Paid Dr. James Evans, Columbia meeting...	28 40
		Paid Dr. J. A. Hayne, Columbia meeting...	40 00
		Paid Dr. Robert Wilson, Columbia meeting...	34 00
		Paid Dr. C. C. Gambrell, Columbia meeting...	32 20
		Paid Dr. H. T. Hall, Columbia meeting...	26 00
		Paid Dr. W. J. Burdell, Columbia meeting...	18 20
		Paid Dr. C. F. Williams, Columbia meeting...	4 00
		Paid Postage, Secretary's office...	5 00
	4	Paid Southern Express Company...	1 00
	9	Paid Southern Express Company...	25
	11	Paid Western Union Telegraph Company...	1 79
	18	Paid Southern Express Company...	35
	20	Paid Western Union Telegraph Company...	31
	25	Paid Southern Express Company...	35
June	27	Paid Freight on library...	27 14
	1	Paid Freight on library...	3 29
	1	Paid Secretary's salary...	41 67
	12	Paid The State Company, for stationery and record books...	26 75
	24	Paid The State Company, printing 1,000 Pure Food Acts...	7 00
	26	Paid Dr. W. J. Burdell, expenses Board of Education meeting...	47 00
July	26	Paid Dr. Jas. Evans, expenses in transporting library...	10 25
	1	Paid Secretary's salary...	41 66
	1	Paid Dr. C. C. Gambrell, expenses Board of Education meeting...	21 60
	10	Paid Dr. C. C. Gambrell, Columbia meeting, inspecting Penitentiary...	37 20
		Paid Dr. H. T. Hall, Columbia meeting, inspecting Penitentiary...	30 00
		Paid Dr. Robert Wilson, Columbia meeting...	34 00
		Paid Dr. W. W. Dodson, Columbia meeting...	23 00

	12	Paid J. Wilson Gibbes, for Neostyle and supplies..	31 80
	31	Paid Dr. C. F. Williams, expenses to Washington..	40 00
		Paid Library rent, June and July..	10 00
		10th	4 00
		Paid Dr. C. F. Williams, one day's service, July	
		Paid Secretary's salary..	41 60
Sept.	1	Paid Secretary's salary for August..	41 66
		Paid Library rent..	5 00
		Paid Postage, Secretary's office..	10 00
Oct.	1	Paid Library rent..	5 00
		Paid Postage, Secretary's office..	10 00
		Paid Secretary's salary..	41 66
	9	Paid Dr. W. J. Burdell, Columbia meeting.. . . .	18 20
		Paid Dr. H. T. Hall, Columbia meeting and inspect- ing Asylum..	26 00
		Paid Dr. C. C. Gambrell, Columbia meeting and inspecting Asylum..	37 20
		Paid Dr. Robert Wilson, Columbia meeting.. . . .	34 00
		Paid Postage for Dr. Wilson..	1 00
		Paid Express..	25
		Paid Dr. W. W. Dodson, Columbia meeting and postage..	24 00
	18	Paid Dr. W. J. Burdell, inspecting Winthrop Col- lege..	28 00
Nov.	27	Paid Dr. W. J. Burdell, inspecting Clemson College.	51 60
Dec.	1	Paid Dr. C. C. Gambrell, inspecting Clemson Col- lege..	26 00
	1	Paid Dr. C. F. Williams, one day's service, October 9th..	4 00
	1	Paid Secretary's salary for October and November..	83 32
		Paid Library rent, October and November.. . . .	10 00
		Paid Postage, Secretary's office..	42 00
	12	Paid Dr. W. J. Burdell, Columbia meeting.. . . .	18 20
		Paid Dr. C. C. Gambrell, Columbia meeting.. . . .	33 20
		Paid Dr. H. T. Hall, Columbia meeting..	26 00
		Paid Dr. Robert Wilson, Columbia meeting.. . . .	34 00
		Paid Dr. C. F. Williams, Columbia meeting.. . . .	4 00
		Paid Dr. H. T. Hall, inspecting State College, Orangeburg..	23 00
	19	Paid Parrott & Bailey, mail scale..	3 75
		Paid The State Company, for stationery..	19 00
		Paid J. Wilson Gibbes, for rubber stamp and cabinet..	5 90
		Paid D. A. Childs, envelopes and blank reports.. . .	34 35
	27	Paid Secretary's salary for December..	41 66
		Paid Library rent..	5 00
		Paid Postage for Secretary's office for October.. .	35 00
		Paid Postage for Secretary's office for December..	40 00
		Paid Stationery for embalmers' examination.. . . .	85
	31	Paid Dr. C. C. Gambrell, expenses to Spartanburg..	27 00
Total..			\$2,375 14

EXPENDITURES FROM EMERGENCY FUND.

1907			
Jan.	1	Paid to Western Union Telegraph Company.. . . .	\$ 3 08
Feb.	1	Paid to Western Union Telegraph Company.. . . .	12 71
Mar.	1	Paid to Western Union Telegraph Company.. . . .	3 85
	1	Paid to H. K. Mulford Company, for vaccine.. . .	935 45
Apr.	10	Paid to Southern Express Company..	3 60
	15	Paid to Southern Express Company..	1 80
	16	Paid to Dr. Geo. R. Dean, clerk hire..	125 00

May	22	Paid to Parke-Davis & Company, for vaccine..	45 53
	22	Paid to H. K. Mulford Company, for vaccine..	35 00
July	31	Paid to Dr. C. F. Williams, investigating typhoid epidemic at State Hospital for Insane..	8 00
		To investigating scarlet fever at Laurens	23 00
Aug.	29	Paid to Dr. G. R. Dean, mileage to Columbia..	18 80
		Four days' service..	16 00
		Mileage to Greenville..	6 40
		Telegrams and other expenses..	2 00
		Three days' service..	12 00
		Mileage to Greenville..	6 40
		Three days' service..	12 00
		Attorney fees, etc..	16 00
		Mileage to Columbia..	18 80
		Four days' service..	16 00
		Mileage to Columbia..	18 80
		Three days' service..	12 00
		Telegrams, telephone, printing and stationery..	18 50
Oct.	1	Paid to Dr. C. F. Williams, for investigating scarlet fever at Greenville ..	34 40
	3	Paid to H. K. Mulford Company, for vaccine ..	60 00
	12	Paid to Dr. W. J. Burdell, for investigating typhoid fever epidemic at Blaney..	9 40
	15	Paid to Dr. G. L. Martin, for work done in scarlet fever epidemic..	372 00
Nov.	6	Paid to H. K. Mulford Company, for vaccine ..	5 00
	6	Paid to Dr. H. H. Wyma, reimbursement for vaccine..	5 60
	15	Paid to Sloan Brothers, Greenville, for formaldehyde, express and postage..	43 63
Dec.	18	Paid to Dr. C. F. Williams, for telegrams received and sent..	2 36
Dec.	18	Paid to E. C. McGregor, for vaccine and postage..	2 32
	18	Paid to Sloan Brothers, for formaldehyde..	9 00
	18	Paid to H. K. Mulford Company, for vaccine..	45 00
	18	Paid to Dr. G. L. Martin and assistants, for work done in scarlet fever epidemic..	594 00
	27	Paid to Dr. C. C. Gambrell, for investigating typhoid in Abbeville County..	5 60
	27	Paid to Dr. G. L. Martin, for work done in scarlet fever epidemic..	30 00
Total..			\$2,589 03

EXPENDITURES FROM CLERK HIRE FUND.

May	1	Paid Dr. James Evans..	\$166 66
July	1	Paid Dr. C. F. Williams..	83 32
Oct.	1	Paid Dr. C. F. Williams..	124 98
Dec.	27	Paid Dr. C. F. Williams..	125 04
			<hr/>
			\$ 500 00

RECEIPTS.

Received in fees from fourteen applicants for a license to embalm..	\$ 70 00
Returned to four who failed..	\$ 20 00
Turned into State Treasury..	50 00
	<hr/>
	\$ 70 00

REPORTS.

Greenville, S. C., Dec. 20, 1907.

Dr. C. F. Williams, Chairman Committee on Epidemic and Endemic Diseases.

Dear Doctor: I beg leave to make this, my report, to your Board for work done in Greenville, Anderson, Pickens and Oconee counties.

At your instance I began work to suppress the epidemic of scarlet fever September 22nd, and have worked continuously to the present, December 20th. I have quarantined 175 premises, disinfected by fumigation, with formaldehyde, 323 premises. There have been approximately 2 1-4 cases in each family affected. The malady was most prevalent along the main line of Southern Railway; in fact I traced the origin of disease as coming from Atlanta, Ga. So far as I have been able to learn, all the Piedmont counties from Laurens up have been more or less affected by this scourge of scarlet fever. Greenville County has suffered most in my estimation. The malady began early in the summer, and the following places have had most cases, viz.: All factory towns in and around Greenville, Piedmont, Pelzer in Anderson County, Greer in Greenville County; Traveler's Rest and Marietta in Greenville County; Westminster in Oconee County; some cases at Walhalla, Oconee County, Central, Pickens County, and all intervening territory. From reports to me, there have been twenty deaths occurring in children, many more not reported. There came under my observation 100 cases nephritis, some incurable, many other complications or sequelae, such as tonsillitis, pericarditis, articular rheumatism, which are the inevitable results of scarletina. The principal trouble encountered by me were, first, the doctors, in some instances, would not report their cases, and second, many families did not call a doctor at first and frequently they were only called when some bad after results aroused the head of the family to the necessity of seeking medical advice. There have been many mild cases, but I find it is from these mild cases the greater number of bad after affects occur. I account for this only in this way, that those who have mild cases do not take the proper care of their children while suffering with scarlet fever, not realizing its dangers. Another trouble encountered by me was, that some people

objected to being quarantined, and in some instances tried to prevent me from disinfecting their premises. These people, of course, did not realize the benefit accruing therefrom.

In many instances I had to hunt up cases of scarlet fever. Some people who reported cases would bind me to secrecy for fear of offending their neighbors. There are a few doctors who make a distinction between scarlet fever and scarletina, and claim the latter is non-contagious. I am glad to report this class of doctors is greatly in the minority.

There is danger of an outbreak next year, from the fact that many houses where mild cases have been were not reported to your agent and are therefore not disinfected.

There are many children who have been left by scarlet fever so afflicted that they will not reach the period of maturity.

I have disinfected all houses, including some school buildings, where, as I was informed, certain cases had existed. As stated above, some doctors would make no reports to me, for in some instances it was very unpopular so to do.

As you know, I was not put in charge until scarlet fever had made much headway. The disease was brought to the attention of our County Medical Society by the members in different localities. I, therefore, did much more disinfecting than quarantining. At Westminster, Oconee County, the graded school was stopped for a period until the danger had passed; also at Central, in Pickens County, a college and the public schools were closed until we could put epidemic under control. At Central I had much assistance from the local doctors; they were great sufferers. Dr. Clayton had five children who had scarlet fever; Dr. Warlick, three; Dr. Shirley, three, and his were the worst cases, to survive, I saw during the fall. At Westminster it was hard to get reports at first, and only after the second visit did I succeed. At Greer, in Greenville County, there was much work to be done, both quarantining and disinfecting. In this work I received much assistance from the doctors there. It was not only in the town and cotton mill towns, but in the whole surrounding country. In Anderson County it prevailed mostly in mill villages, but there were many in the rural districts. There is yet much work to be done in disinfecting, or another scourge will prevail next year. I am doing the work as fast as I find where cases have existed. There are some cases in Greenville, but epidemic is practically under control. The management of the cotton mills here have co-operated with your agent, with two

or three exceptions. They contributed material with which to fumigate the premises in 50 per cent. of the cases. The exceptions not only refused to furnish any material aid, but seemed not to care whether the work was done or not.

In the rural districts the people took their children with scarletina to Sunday schools, to preaching and picnics, and in this way the epidemic was widespread before the State Board of Health took matters in its hands. The parents did not seem to realize the gravity of the disease.

One physician gave me a list of 26 families where scarlet fever had been. He reported to me that he had only visited six of these families; that the disease was very mild, and that in the other twenty families he had prescribed without seeing the children; that I would find them all well. I found twelve children in these families suffering from nephritis, with general anasacra. I found two suffering from pericarditis, four from articular rheumatism, and eight from tonsilitis; all of which were caused from scarlet fever. I expect many deaths have occurred which have not been reported to me, and certainly there will be quite a number from the after effects. Some will have their systems impaired for life.

I will state that after disinfecting the premises properly, no new cases occurred, and no new cases between the first and second disinfection where seven to nine days lapsed, which is conclusive evidence that the methods you directed to use will kill all the germs and prevent the spread of the fever, where done, of course, in the proper way, using strong formaldehyde.

There were four homes where cases developed after first disinfecting, five to six days. The houses were very open and it was hard to treat them properly.

As before stated, some of the factory authorities kindly furnished me with materials to disinfect. Some private families furnished materials also, and the local Board of Health of Greenville let me have free a quantity of formaldehyde where the work was close outside the incorporate limits.

The cotton factory people have suffered most from scarlet fever, and, strange to say, some of them seriously object to being quarantined and many to having their premises disinfected.

In conclusion, I desire to emphasize the fact that disinfection is effective and will kill the germs in all cases. Where I disinfected premises twice, the period of incubation had not expired when new cases developed. I quarantined 175 homes, fumigated or disin-

fectd 323—55 cases at Westminster, Oconee County; 75 cases at Central, Pickens County; 82 cases at Greer, Greenville County; 4 cases at Taylors, Greenville County; 25 cases at Piedmont, Greenville County; 40 cases at Pelzer, Greenville County; 4 cases at Pendleton, Anderson County; 100 cases at Traveler's Rest, Greenville County; 20 cases at Marietta, Greenville County; 200 cases at Greenville, outside incorporate limits; 105 cases in intervening territory.

- In this report take notice that there was frequently one family quarantined twice, and disinfected from one to four times, each time is counted as a separate house or family.

Respectfully submitted,

G. L. MARTIN, M. D.,
Agent State Board of Health.

August 3, 1907.

Dr. C. F. Williams, Chairman Committee on Epidemic and Endemic Diseases, Columbia, S. C.:

On July 31 I went to Blaney and investigated the typhoid fever condition at Lytt Ross' place. This was thought necessary, as there had been some mention of this epidemic in the press, attributing the trouble to suspected poisoning. I found that there had been, and is at present, seventeen cases of sickness in this epidemic. Of these cases, one, a daughter of Ida Kelley, was in bed with what appeared to me to be a typical case of typhoid fever. In the same house was a boy of ten years that, from the history and present condition, was in the convalescing stage of typhoid fever.

Of the cases in the Ross family, all but one had diarrhoea, one of the fatal cases had three hemorrhages after the second week of the disease, and one of the cases that recovered had one slight hemorrhage. In another case the mother told me that the trained nurse showed her some spots on the patient and told her that they were a sign of typhoid fever. The attending physician, Dr. J. W. Team, of Ridgeway, S. C., diagnosed these cases as typhoid fever, I was informed by the mother of the family.

The mother of the patients in the Tillman family said that Dr. Team attended her family and diagnosed the disease as typhoid fever.

The other cases were attended by Dr. Langford, of Blythewood, S. C., and I was told that he diagnosed his cases typhoid fever.

I could find no one that knew anything about the doctor having

said that there had been any poison put in the well, but all said that Dr. Team had told them that the fever came from the well.

I have made a very rough sketch of the premises, which I append. From this it will be seen that the natural drainage from the locality where the stools from the first case were buried is directly toward the well and only 210 feet distant from the well. It will also be seen that the natural drainage from the immediate vicinity of the Kelley house is toward the spring. The stools from the Kelley patients are now being buried between the house and the point marked "High Point (2)." It would be reasonable, therefore, to suspect the spring as being infected, as would be the branch. The distances marked on the map were measured by myself. The stools from the Tillman cases were buried between the Tillman house and the branch which is shown in part on the map. I found flies plentiful in all the houses, and in reply to my questions I was told that no effort had been made to either kill the flies, screen the patients, or to keep the flies from the urine, stools or other discharges. Also, in reply to questions, I was told that in none of the cases was any disinfectant used with the urine, stools or other discharges. Mrs. Ross stated that she had "sprinkled the floor of the room with carbolized water a few times." She also stated that she buried the stools from the first case, and showed me the locality marked on the map. She said that after the first case "she didn't bury them any more, but just threw them out anywhere." The burying amounted to digging a hole about four to six inches deep and pouring in the stool and raking in a little dirt, in the most of the places not filling the holes. No lime was used.

The well had been cleaned out (?) three days before I inspected it. It is 28 feet deep and subject to a rise of the water from surface water. The water was a little muddy, and in the bucketful that I drew up were floating some shreds that I found to be algae (microscope, one-sixth inch objective). I was told that when the well was cleaned several toads in various stages of decomposition were brought up. Under the conditions that are apparent I did not think it was necessary to go to the expense of having an analysis of the water made. I think that the conditions at the Tillman house are very good, provided the branch water is not used.

I did not see the conditions at the home of case No. 17, as it was getting late and there was a clear history of infection from the Ross well. The patient is now practically well, having been out of the house for a week.

The cases were as follows:

No. 1, Dozier Ross, age seven years, confined to bed May 17th, died May 27.

No. 2, Lytt Ross, aged 45 years, confined to bed June 8, died July 15th.

No. 3, Minnie Ross, aged four years, confined to bed June 9, sick two weeks, recovery.

No. 4, Horace Ross, aged 10 years, confined to bed June 21, sick three weeks, recovery.

No. 5, Nonie Ross, aged 15 years, confined to bed July 9, sick three weeks, recovery.

No. 6, Honor Ross, aged seven, confined to bed June 25, sick four weeks, recovery.

Cases 7, 8 and 9 were in the family of Ben Tillman, colored. The first case was a boy who worked at Ross' and who was taken on May 25th. Eight and 9 evidently were infected by flies from this case. All are well now.

Cases 10, 11, 12, 13, 14, 15 and 16 were in Ida Kelley's house. No. 10 was Ida Kelley, colored, taken May 24, died June 6.

Case 15 is Laura Kelley, daughter of Ida. Is now in the fifth week of the disease and is seriously ill.

Case 15, John Kelley is in bed, but convalescing.

Case 17, lived about a mile from Ross', but worked for Ross, and was sick the latter part of June. Ate and drank water at Ross' while working there in May. All the Kelleys used water from the Ross well.

The well water was used until June 22nd, when the spring water was taken for drinking purposes. Water was not boiled at any time.

There has been no typhoid fever at this place that I can get any history of before case 1 was taken. This child had never been away from home except in the immediate neighborhood. I can find no suspicious articles of food or drink that may have been the source of infection, unless the infection came through bottled soda water, and this seems very unlikely, if indeed the gas in the water is not fatal to the bacilli. I did get a history of a man, an agent for a well fixture, boarding at Ross' for a week in April, and it might have been that this party is a bacillus carrier. I will admit that this is somewhat improbable, but I can find no other source for the infection. The subsequent cases are clearly due to the well and to flies.

The conditions were such that a doctor is tempted not to say anything about the disinfection of stools, as at best with the class of people that we have in this instance very little attention will be paid to what they are told.

Dr. Langford in reply to a letter I wrote him replied as follows: "My Dear Doctor: I first treated Ida Kelley, near Blaney, who died a few days after I treated her. I was not called back any more until after you had made your inspection.

"My instructions were: Burn the stools, use fly paper to catch the flies and keep them burned every day. Get water from another source and boil before drinking. Have no other statement to make except that I found the patients suffering from typhoid fever.

"(Signed) M. LANGFORD."

Dr. Team in reply to a letter stated that he diagnosed his cases typhoid fever and urged all possible precautions as to the spread of the disease.

At the present time, October 1st, I can report nine cases in my own practice that were beyond a doubt infected by this same well. The first of these was a young white man who visited Lytt Ross and "sat up" with him two or three nights during his illness. This patient came down about two weeks after Ross' death and died from intestinal hemorrhage on the 18th day of his attack.

The second case was a 10-year-old girl, whose parents visited at Ross' during the sickness in that family. This was a mild case and is now well.

The third was a young colored man, who attended the "setting up" of Ida Kelley.

Fourth, a sister of the third case. This patient came down three days after her brother. She attended the Kelley wake.

Fifth, a colored man who also attended the wake and funeral of I. Kelley.

Sixth, the father of case 2 of my cases.

Seventh, a child, who, with cases 3 and 4 of my cases, attended the wake.

Eighth, a sister of cases three and four. This case was contracted from case 3 or 4.

Ninth, the mother of case 2, my cases, I think that this case was contracted from case 2.

Of these cases of mine the first died. The rest are well with the exception of case 9, and at this time she has been free from fever for five days and will recover, I think.

My object in making this report as full as I have is that I think that it very clearly illustrates the necessity for thorough sanitary management of all cases of typhoid fever, and illustrates the necessity of this disease being made a reportable disease, with the distribution of leaflets explaining the danger of, and the means of preventing the spread of the disease. I would not criticize the physicians in attendance on these cases, for I fully realize the great difficulty that the country doctor meets with in such matters, but I do think that many doctors in similar circumstances are not as careful as they should be to give minute details as to the management of these cases from a sanitary standpoint. The distribution of leaflets by the State Board of Health, as is done in many States, would relieve the attending physician of this duty and would be better than depending upon the physician. Of course this is impossible with the law and appropriation that we now have, but I think that if this matter is brought to the attention of the profession throughout the State it can influence the General Assembly to give us the necessary money and law.

I instructed Mrs. Ross to fill up the well at once, after emptying a barrel of lime into it and also to fill up the spring and have another well dug near the locality marked "High Point, No. 1" on the sketch. I have learned that she has done so. There have been no other cases that I can learn of that were infected at this place.

A few days after I made the inspection of this locality I sent a denial of the poisoning story to each of the Kershaw County papers and to the Columbia Record, stating that the whole trouble was due to the well being infected with typhoid germs.

Very respectfully,
W. J. BURDELL.

Abbeville, S. C., Dec. 21, 1907.

Dr. C. F. Williams, Chairman Committee on Epidemic and Endemic Diseases:

On December 15 I investigated the typhoid cases reported by Dr. G. A. Neuffer in the Sharon section of Abbeville county, and find that he has treated in one place in the past four weeks nine cases of typhoid fever, five of which are confined to their beds at present, one died and the others are convalescent. This epidemic was started by a young man coming here from Alabama. His stools, the first week of his illness, were not disinfected, before being thrown out on the ground in the yard. At that time there were a great number of flies in the house, and I think it was disseminated by them. The water has been examined and found free from contamination. I have sent another specimen to Dr. Parker, of Charleston, but have not received his report as yet. The surroundings of this farmer's home are ideal, the place is well drained, and I feel certain had he excluded the flies and been very particular about the stools in the beginning, or rather with the first case that was infected in another State, he would have had only the one case in his family. Those who contracted the fever were the volunteer nurses that spent a good portion of their time with the patient. Had it been the well water, the majority of the people of a large country school would have contracted the fever, for they used water from this well for several weeks after the fever made its appearance. These cases have taught the inhabitants of that section a valuable lesson, for every farmer in that neighborhood is well posted on the mode of infection of fever and other diseases.

If Dr. Parker reports that the water contains the typhoid bacillus, I will inform you as soon as I get his report.

C. C. GAMBRELL.

REPORT OF COMMITTEE ON STATE PENAL AND CHARITABLE INSTITUTIONS.

Your committee beg leave to submit the following report:

On July 9th we visited the State Penitentiary and were conducted through it by Dr. Butler, the physician in charge.

We found the officers' quarters kept in excellent condition. The new male prisoners' building is kept in a thoroughly sanitary condition and we did not find anything in this building that could be im-

proved on. The sanitary arrangements of this building are as near perfect, in our estimation, as a prison building can be.

The kitchen and dining hall were in good condition and the food that was being prepared was wholesome and clean.

The woman's building is an old wooden structure that has been used for years for the confinement of female prisoners. One end of this building is occupied by the white women and is kept very clean, but the end occupied by the colored women is in an unsanitary condition. The beds are filthy and they are not constructed so that they can be kept in a clean condition. We recommend that iron bedsteads be used and new ticks be supplied these prisoners; also that they be prohibited from expectorating on the floor. We found several patients suffering from tuberculosis on this ward and found no provision had been made for the care of sick women in either the general or tubercular hospitals. We recommend that this unsanitary and infected building be condemned and a new female building be constructed as early as possible, with an annex for the care of the sick, and a portion of the annex be set aside for the treatment of tubercular cases.

The General Hospital lacks that systematic care and attention that go to make a good hospital and insure good results in the conducting of severe cases of sickness to health. We recommend that two or three intelligent prisoners be instructed in nursing and put in charge of this building and be required to keep it in a sanitary condition as well as nurse the sick and look after them. We also recommend that one ward in this building be kept as a detention ward where patients that are suspected of having a contagious disease can be kept until a diagnosis is made. If such patient is found to be suffering with tuberculosis he can be sent at once to the hospital for consumptives and not be permitted to infect other patients whose vitality has already been lowered by wasting disease.

The Tubercular Hospital is a well constructed modern building and permits an unlimited amount of fresh air and sunshine. This building is not as extensively used as it should be, for we only found six patients in it, and we are sure the lives of a greater number could be prolonged by their having the benefit of this building. We do not think the diagnosis of tuberculosis is made early enough in this class of cases and would recommend that the authorities employ a competent bacteriologist to make examinations of sputum of suspected cases. The sputum should be collected and sent by the resident physician to the bacteriologist, and if his examination showed

"T. B.," the patient should at once be given the advantages of this well constructed hospital. By this routine work many lives can be prolonged and other inmates and associates protected from this dreaded disease. The hospital is a step in the right direction—now give those that need its advantages the benefit of it.

The Hosiery Mill is not in a sanitary condition and too many people are confined in this building for the amount of fresh air admitted. We recommend that the building be better ventilated or the numbers reduced; also that spitting on the floor be prohibited.

The yard, sewer, lot, stables and water-closets are well kept.

Respectfully submitted,

(Signed)

C. C. GAMBRELL,
H. T. HALL.

During the past year we have visited the Asylum twice, once in July when they were having an epidemic of typhoid fever in the white female ward. We could not find the origin of this epidemic, but found two of the wells in bad condition, but the authorities had had them closed. The hospital staff is to be commended for the efficient way in which they handled this epidemic, for in a few weeks they had the solution well in hand and in a few weeks most of the cases had recovered, and we have not heard anything from the Asylum in regard to the fever. The Asylum is well kept and in a good condition from a sanitary standpoint, but the place is very much overcrowded. They have room to accommodate about eleven hundred patients, but have there about seventeen hundred. This necessitates seven or eight having to sleep in one room in some of the wards, which should not be the case in an institution of this kind, for this class of patients is very untidy at best. It also necessitates keeping patients in the basement rooms, which were never intended for living apartments, for they are damp and poorly ventilated. To obviate this crowded condition, the Regents are making an effort to purchase a farm near the city of Columbia, where the mildly insane, epileptics and tubercular patients can be kept. We heartily agree with this plan and hope the proper support will be given the Asylum authorities at this coming session of the Legislature to carry out this plan. Under the present conditions, the tubercular patients cannot be separated from the non-infected. This condition should not exist, for because one is so unfortunate as to be insane is no reason why he or she should be subjected to tuberculosis, and that is

the condition when you force one to occupy the same room or apartments with one having consumption. We hope the necessary provisions will be made for these unfortunates as soon as possible.

C. C. GAMBRELL,

H. T. HALL,

Committee.

REPORT OF COMMITTEE ON SANITARY INSPECTION OF SCHOOLS.

The first work done by this committee was the conference with the State Board of Education. At that conference, we submitted some recommendations that the Board of Education seemed to endorse heartily. No action has been taken along the lines suggested, however. We would suggest that the Legislature be urged to enact such laws as would put those resolutions in force, especially the matter of teaching the means of preventing the dangerous communicable diseases. There could be printed at a small cost a pamphlet giving the data necessary in sufficient number to furnish each school teacher in the State with one, and the teacher should be required by law to teach matters. This is a very important matter, as in this manner we can do the most effective work in eradicating these diseases.

We would also suggest that the Legislature be urged to enact a law making the use of "vision charts" obligatory in the schools. This is urged not as the best thing that could be done, but as a plan that would cost very little, and would result in much good. The better plan would be to require the sanitary inspection of the eyes, ears, throats and noses of school children.

A fairly good book on Physiology and Hygiene is now used in this State as a school book, but it has no mention of the rectum or genital organs, and it has the usual amount of raving over alcohol and tobacco. We would not decry the teaching of the evil effects of these drugs, but we would have them taught in a manner that would result in some good.

We would heartily commend the work done by the Clemson College Extension Work. Bulletin, No. 1, Vol. III, is a very valuable bulletin, and if it were distributed widely throughout the State, would doubtless result in much good.

The course in hygiene, given at the University of South Carolina, is also very good.

Much good work is being done by the School Improvement Society. It is the intention of the chairman of this committee to correspond with Miss Nance at an early date and endeavor to have that organization work with us along sanitary lines in school matters.

There is nothing more to report but the sanitary condition of the State Colleges.

CLEMSON COLLEGE.

On Nov. 26, in company with Dr. Gambrell, I inspected Clemson College. The sanitary conditions at this institution are very good, but I would call attention to a few improvements that could be made.

The water for drinking purposes is obtained from a well. This well is in a ravine in the rear of one of the dormitories. The distance is considerable, some hundreds of yards, and the well is walled up and the surrounding ground is ditched in such a way as to prevent surface water flowing directly into the well, and the well is walled up and covered, still it is possible that this well may become contaminated. The surgeon was cautioned to keep a careful lookout for this contingency. The water is frequently analyzed by the chemist at the college, but no bacterial examination is made. I would suggest that a bacterial analysis of this water be made by the Bacteriologist of the Board, the same as is done in the case of municipal waters.

The sewerage system of the college is very good, but it would be better if all the houses in the settlement were required to connect with the sewer. Several of the houses in the settlement get their drinking water from wells. I think that it would be better if there was one source for all the drinking water used in the settlement.

The dairy barn could be improved by putting in concrete floors. The wooden floors now in use will eventually decay with leakage of urine, and if the whole floor was of concrete, draining into the gutters for urine, it would be an improvement. I would also suggest that the hog pens be removed. At present they are only a few feet distant from the dairy barn. The feeding of the hogs is done along the fence within a few feet of the barn. Naturally, in warm weather, flies would accumulate, and there would be a great likelihood of them also visiting the barn during milking hours.

The inspection of this institution was not as thorough as it might have been, but I am satisfied that we saw all that there was that could be criticised. I would mention a feature here that seems to

me to be a very good one. Around the barracks have been laid concrete areas, sloping into gutters that in turn lead to the sewer. This was done to provide for the slops and urine that some boys will not dispose of properly. The dangers arising from urinating from windows is in this manner minimized.

These areas were clean and the surgeon assured us that they were looked after by the janitors.

UNIVERSITY OF SOUTH CAROLINA.

On Nov. 28, in company with Dr. Williams, I inspected this institution. I would state in the beginning that all the buildings on the campus are very old and were evidently constructed without any attention to sanitary details. The principal need there is a new lot of buildings, but this is out of the question, I suppose, so I would suggest that the Board urge the Legislature to give the University a small appropriation for sanitary purposes. The president of the University can suggest the amount that would be needed better than I can. Among the many things that are needed there I would suggest a system of water closets, or at least urinals, in each section of the dormitories, with a urinal on each floor of the building.

A central heating plant with a system of steam heating is badly needed, and I would also suggest that drinking water be piped into the building.

I think that the University is in about as sanitary a condition as it can be kept, when all things are considered.

Some matters that did not appear all right when I was there have been satisfactorily explained by the president.

There was some complaint of students urinating from windows. This matter might be lessened by having the closets within the buildings, or connected with them by covered ways.

The students do not always flush closets after using them. I mentioned this matter to the president, and he assured me that he would have the janitors visit the closets twice daily and flush and clean the closets. I suggested that he post notices in each closet building, giving the sanitary reasons for the necessity of flushing the closets.

There was a good bit of accumulated rubbish in the rear of the buildings, which the president accounted for by the absence of the marshal. The president states that this rubbish is removed certainly once, and more often twice a week. The steward's hall, or mess

room, is, I think, in a very sanitary condition, and the food and food-stuffs seem to be handled in a sanitary manner.

The gymnasium and baths are in very good condition.

Altogether, I think that the institution is in very good shape.

WINTHROP COLLEGE.

On October 15th, I inspected this institution, covering in my inspection the heating, ventilation, plumbing, sewerage, lighting, water supply, and the general sanitary condition of the institution. The dining room, kitchen, class rooms, halls, dormitories, infirmary, library, laundry, and dairy farm were thoroughly inspected, and I found nothing to criticise, but much to commend. I do not see that the sanitary condition of the institution could be better. I would say a few words in especial commendation of the infirmary, the dairy farm and the water supply.

The infirmary is a model one in every respect, and I doubt if there is a better constructed or cleaner infirmary in the country.

The dairy farm is as clean and sanitary as such a place can be kept.

The water supply is very good, and one feature of this that I would mention is a pump by which water fresh from the wells is kept flowing through the pipes, the overflow being collected into a tank for fire purposes. This insures a supply of fresh running water for drinking purposes. The water is obtained from a series of artesian wells. President Johnson informed me that he had been sending samples of the water to Baltimore for analysis and bacteriological examination. It seems to me that this water should be analyzed by the chemist for the State Board of Health and save the college this expense.

President Johnson informed me that it was his intention to convert one of the porticos of the infirmary into a sun parlor. This will be an excellent improvement.

The temptation is strong to give a detailed statement of the many excellent features of this institution from a sanitary standpoint, but it can be all told in a very few words. The conditions at Winthrop could scarcely be improved, and I doubt very much if there is such an institution in the country that is in a better sanitary condition than Winthrop College. The State may well point with pride to this college, from the sanitary standpoint.

I would feel that this report were incomplete if I failed to state that I was very much impressed with President Johnson. He courteously accompanied me and assisted me in making the inspection. I found him to be well up in sanitation, and I feel that to him is due much of the credit for the most excellent condition of the institution.

REPORT OF INSPECTION OF STATE COLORED COLLEGE AT ORANGEBURG.

Drainage—New system of sewerage just completed empties into canal about one-fourth mile from campus. From here it is carried to Edisto River. This system is independent of City of Orangeburg system. There are still two or three surface closets in use. The contents from these is collected in roller troughs; every other day the troughs are run out and emptied; quantities of lime is then placed in trough.

One room in the male and female buildings is set aside for use as a hospital. These rooms are of medium size and contain four beds each. The rooms are kept neat and clean; plenty of sunlight; ventilation is good.

The furnishing in these rooms are not what they should be. No cases of sickness on hand now. One case of diphtheria occurred this year in one of the families living on campus. This case was quarantined and all necessary precautions taken to prevent spread. No other cases developed.

Sleeping quarters are kept clean and all well ventilated. In building for males some of the bed rooms are overcrowded. Class rooms are large, only one overcrowded. These are well furnished and kept clean. Kitchen and dining room are kept in perfect condition. Grounds are well kept. Generous supply of lime is used daily. Tubercular cases are sent home as soon as recognized.

H. T. HALL.

THE CITADEL.

This institution was inspected by Dr. Willison. He reports that the conditions there are as good as could be expected.

A feature of this institution that deserves especial mention is that self-flushing waterclosets are used. This feature is very good, as many boys do not flush the closets after using them.

A new infirmary has been designed and this will be up-to-date.

The mess hall is kept clean and in summer is screened to keep out flies. The table fare is plain but good.

The water supply is obtained from a cistern for drinking purposes, and for other purposes the city water is used.

W. J. BURDELL.

REPORT OF BACTERIOLOGIST.

Charleston, S. C., December 27, 1907.

Dr. C. F. Williams, Secretary State Board of Health of South Carolina, Columbia, S. C.

Dear Sir: I respectfully submit the following report of analyses of samples of water from the public water supplies of South Carolina made under the direction of the State Board of Health, in accordance with Act No. 253 of the General Assembly of the State of South Carolina.

Eighty-seven samples were received for sanitary-bacteriological and sanitary-chemical analysis. Of these 49 were subjected to sanitary-bacteriological examination, and 38 to sanitary-chemical examination.

Of the 29 water supplies listed in tabulated report, six are from springs and branches, six from rivers, and 17 from deep wells.

The analyses indicate that the waters of these supplies are of good quality. In eight of them, however, coli group organisms were found in some samples, and additional samples were called for in order to investigate the nature and source of this contamination. In one of these supplies the coli group organisms were found to persist in a number of samples taken at intervals during two weeks; and were later found to be present in numbers in a neighboring pond. Though the presence of these organisms does not by itself condemn a water, the fact that these organisms can gain access to the supply from time to time shows that it is subject to local contamination, and should be carefully looked after.

Five of the supplies were personally inspected by me, and the conditions surrounding two of them are such as to constitute a potential source of danger; which might at any time become an active one. These facts have been called to the attention of the Mayor and local Boards of Health. These supplies will be carefully watched, and steps are now being taken to remedy the conditions by the establishment of sewage systems in these cities.

In one case, though, the wells supplying water are 287 and 315 feet deep, the evidence of the access of surface waters is conclusive since the pumping of these wells has drained part of a neighboring swamp, and several surface wells.

You will note, in tabulated report, that 14 supplies have submitted but one sample for chemical analysis, and that two supplies have submitted no samples for chemical analysis. With the exception of the two supplies that have submitted no samples at all for chemical analysis, all of the failures to submit samples were during the first quarterly inspection, and the failure to respond to call for samples was probably due to a misunderstanding of the nature and object of the law.

Most of the supplies responded promptly to the last call; and I think appreciate the value and importance of these inspections.

I append tabulated report of sources and analyses of said water supplies.

Respectfully yours,

FRANCIS L. PARKER, JR.,

Bacteriologist and Chemist to the State Board of Health of S. C.

	Taste.	Odor.	Color Pt. Co.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrates.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply of Abbeville, S. C.
Source: Branch, Spring and Well 500 Feet Deep.

Drawn August 27	none	none	t'r'dly faint	6.00	31.40	36.00	90.00	22.00	0.00	0.034	0.00	0.00	1.30	Negative
Drawn October 27	none	none	t'r'dly dist'n't	4.00	23.00	26.00	82.00	21.00	0.024	0.052	0.00	0.00	1.10	Negative

Water Supply of Aiken, S. C.
Source: Well 535 Feet Deep.

Drawn September 25	none	none	none	12.00	25.00	45.00	270.00	21.00	0.002	0.004	0.00	0.00	0.90	Negative
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Anderson Water, Light and Power Company, Anderson, S. C.
Source: Valley of Whitner's Creek, Small Springs and Gang Wells.

Drawn July 12	none	none	10.	5.00	22.00	.....	72.00	21.00	0.004	0.045	0.00	0.20	1.80	Negative
Drawn October 26	none	none	15.	3.00	30.00	25.00	70.00	30.00	0.008	0.050	0.00	0.20	1.50	Negative

RESULTS IN PARTS PER MILLION (Continued).

	Taste.	Odor.	Color P. t. C. o.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply of Beaufort, S. C.

Source: Well 120 Feet Deep.

Drawn December 9	none	none	none	24.00	112.00	84.00	186.00	60.00	0.004	0.044	0.00	0.10	1.00	Negative
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Water Supply of Brunson, S. C.

Source: Well 748 Feet Deep.

Drawn October 29	none	none	none	3.00	23.00	52.00	138.00	48.00	0.033	0.024	trace	0.00	2.10	Negative
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Charleston Light and Water Company, Charleston, S. C.

Source: Goose Creek (12 Miles From City).

This is an impounded supply, the reservoir being an old tide-water basin.

Drawn July 27	Very faint veg.	0.00	33.00	34.86	7.00	128.00	84.00	trace	0.16	0.00	0.00	0.00	6.10	Negative
Drawn November 1	Very faint veg.	8.00	40.00	34.00	6.00	145.00	50.00	0.001	0.136	0.00	0.00	0.00	2.60	Negative

Water Supply of Chester, S. C.
Source: Sandy River.

Camden Water, Light and Ice Company, Camden, S. C.
Source: Sand Hill Springs (Small, Shallow and Many).

City Waterworks, Columbia, S. C.
Source: Congaree River (Filtered).

Drawn	July 16	t'r'di'y faint none	3.00 4.00	21.00 17.00	8.00 13.00	64.00 64.00	24.00 20.00	0.002 0.002	0.016 0.020	Very faint trace 0.00	2.00 0.80	Negative Negative
		none	3.00	21.00	8.00	64.00	24.00	0.002	0.016	Very faint	2.00	Negative
		none	4.00	17.00	13.00	64.00	20.00	0.002	0.020	trace	0.80	Negative

RESULTS IN PARTS PER MILLION (Continued).

	Taste.	Odor.	Color Pt. Co.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Oxygen Consumed	Bacterial Indications of Contamination.
Darlington Light and Water Company, Darlington, S. C. Source: Well 337 feet deep.														
Drawn November 19	none	none	12.00	4.00	19.00	0.00	66.00	16.00	0.098	0.004	0.00	0.00	0.40	Negative
Water Supply, Eutawville, S. C. Source: Well 780 Feet Deep.														
Drawn July 26	Very faint soda	none	none	6.50	15.00	97.00	276.00	22.00	0.186	0.041	0.00	0.00	0.40	Negative
Water Supply, Gaffney, S. C. Source: Two Wells and One Spring; Wells 175 and 555 Feet Deep.														
Drawn November 13	none	Very faint veg.	4.00	4.00	48.00	50.00	111.00	30.00	0.006	0.006	0.00	0.05	0.4	Negative

	Taste.	Odor.	Color Pt. Co	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrates.	Oxygen Consumed	Bacterial Indications of Contamination.
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The Black River Water Company, Georgetown, S. C.
Source: Black River (Filtered).

Drawn July 16	faint veg.	dist'n't veg.	130.	7.00	18.59	8.00	80.00	40.00	0.02	0.258	0.00	0.15	18.90	Negative
Drawn October 28	faint veg.	faint veg.	1.50	4.00	23.00	11.00	80.00	50.00	0.056	0.400	0.00	0.10	9.80	Negative

Paris Mountain Water Company, Greenville, S. C.
Source: Mountain Springs.

Drawn August 27	none	none	30.00	3.00	18.80	17.00	43.00	20.00	0.002	0.022	0.00	0.00	2.10	Negative
Drawn November 9	none	none	12.00	3.00	4.20	7.00	42.00	19.00	0.006	0.031	0.00	0.00	1.90	Negative

Water and Light Plant, Greenwood, S. C.
Source: Well 325 Feet Deep.

Drawn July 22	none	none	none	7.00	46.50	48.00	116.00	16.00	0.00	0.028	0.00	0.00	1.20	Negative
Drawn November 16	none	none	none	4.00	48.00	44.00	123.00	43.00	0.008	0.018	0.00	0.00	1.30	Negative

Water Supply, Hampton, S. C.
Source: Well, (Depth Not Reported).

Drawn November 28	none	none	none	7.00	12.7	108.00	209.00	61.00	0.126	0.012	0.00	0.00	0.20	Negative
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RESULTS IN PARTS PER MILLION (Continued).

	Taste.	Odor.	Color Pt. Co. Standard.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply, Kershaw, S. C. Source: Well 464 Feet Deep.

Drawn August 27	none	none	7.00	5.00	34.80	41.00	127.00	27.00	0.004	0.006	0.00	0.00	1.10	Negative
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Water Supply, Luray, S. C. Source: Well 900 Feet Deep.

No samples received for chemical analysis														Negative
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Marlon Water, Light and Power Company, Marlon, S. C. Source: Well 108 Feet Deep.

Drawn October 15	none	none	none	7.00	65.00	67.00	143.00	40.00	0.018	0.016	0.00	0.00	0.53	Negative
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Water Supply, Newberry, S. C. Source: Well 283 Feet Deep.

Drawn September 6	faint saline	0.00	0.00	26.00	139.00	110.00	298.00	114.00	0.004	0.052	0.00	0.00	1.50	Negative
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	Taste.	Odor.	Color, Pt. Co.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply, Orangeburg, S. C.
Source: Well 200 Feet Deep.

Drawn July 20	none	none	none	6.00	111.55	106.00	162.00	48.00	0.00	0.002	trace	0.00	1.00	Negative
Drawn October 31	none	none	5.00	6.00	116.00	101.00	217.00	75.00	0.018	0.024	0.00	0.00	0.10	Negative

Water Supply, Port Royal, S. C.
Source: Well 150 Feet Deep.

Drawn Aug 28	none	none	40.00	14.00	102.25	92.00	148.00	55.00	0.070	0.078	0.00	0.00	2.60	Negative
Drawn October 29	none	none	15.00	14.00	110.00	82.00	163.00	68.00	0.054	0.126	0.00	0.00	1.70	Negative

Rock Hill Water, Light and Power Company, Rock Hill, S. C.
Source: Two Wells 315 and 287 Feet Deep.

Drawn July 11	none	none	none	25.00	79.00	56.00	176.00	66.00	0.00	0.001	trace	0.00	1.70	Negative
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Acme Water Supply Company, Spartanburg, S. C.
Source Chiquepin Creek, With Shoally Creek as Auxiliary.

Drawn September 11	none	none	none	5.00	13.90	2.00	34.00	5.00	0.008	0.008	0.00	0.00	1.00	Negative
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RESULTS IN PARTS PER MILLION (Continued).

	Taste.	Odor.	Color Pt. Co.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply, St. Matthews, S. C. Source: Well 350 Feet Deep.

Drawn December 7 . . .	none	none	20.00	4.00	19.50	12.00	58.00	16.00	0.00	0.032	0.00	0.00	0.20	Negative
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Water Supply, Sumter, S. C. Source: Driven Wells from 30 to 420 Feet Deep.

Drawn July 16 . . .	none	none	none	8.50	18.59	5.00	52.00	28.00	0.28	0.008	0.002	0.70	1.40	Negative
Drawn November 1 . . .	none	none	10.00	5.00	16.00	5.00	41.00	20.00	0.080	0.014	0.00	0.30	0.20	Negative

Municipal Electric Light and Waterworks, Union, S. C. Source: Spring Branches (Two Miles From City, Filtered).

Drawn November 15 . . .	none	none	none	3.00	14.00	20.00	70.00	52.00	0.078	0.024	0.002	0.00	0.6	Positive
Check, November 25 . . .	none	none	none	3.00	.....	.....	.....	.....	0.004	0.010	0.00	0.00	.....	Negative

	Taste.	Odor.	Color P. t. Co.	Chlorine.	Total Hardness.	Alkalinity.	Total Solids on Evaporation.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Oxygen Consumed	Bacterial Indications of Contamination.
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Water Supply, Varnville, S. C.
Source: Well 832 Feet Deep.

No samples received for chemical analysis	Negative
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Water Supply, Yorkville, S. C.
Source: Creek 8 Feet Wide, 1½ Feet Deep.

Drawn November 4	none	none	17.00	4.00	25.00	28.00	88.00	25.00	0.004	0.030	0.00	0.00	0.80	Negative
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What Are Pellagra and Pellagrous Insanity? Does Such a Disease Exist in South Carolina, and What Are Its Causes?

AN INQUIRY AND PRELIMINARY REPORT.

State Hospital for the Insane,
Columbia, S. C., December 30, 1907.

To the South Carolina State Board of Health:

Gentlemen: The medical members of the Board of Regents and the medical staff of the State Hospital for the Insane beg, respectfully, to submit to your attention the following report:

Introduction.—By way of introduction we wish to say that, like other physicians of our acquaintance, we have from time to time been perplexed by the appearance of a disease presenting the mental symptoms of depression or mild delirium, combined with an eczematous condition of the exposed surfaces of the body—especially of the hands and face—and usually the third symptom of an obstinate diarrhoea. Several of our cases have shown at home in different parts of the State mental symptoms of such pronounced character as to require commitment to an asylum. Three outside cases have been seen in consultation.

The syndrome of skin, intestinal and mental symptoms point towards a disease known in Southern Europe as pellagra, but that disease has so rarely been suspected or recognized in this country that we find that other physicians, like ourselves, in studying their cases have excluded pellagra because most authorities deny its existence in North America. This inquiry, based largely upon clinical evidence and a study of the few original papers on the subject by Americans, brings into question the truth of the last sweeping statement. We are satisfied that we are dealing with conditions very similar to those presented by true pellagra as described by authors, but of the real nature of the disease, especially as to its etiology, we are in doubt—hence this inquiry.

The recent admission to our State Hospital for the Insane of three cases which present clinically the classical symptoms of pellagra have forced us to study them with especial care and to review the histories of cases previously observed, besides looking up such literature as is available. We have also conferred with several experienced general practitioners in Columbia and Charleston and from them have secured assistance and advice as well as the histories of outside cases included as part of this report.

It is the opinion of the older members of the staff that cases presenting pellagrous symptoms have appeared among our patients for some years and that the real nature of the malady has not been fully recognized and determined, but that latterly it is becoming much more frequent among our patients. These patients have come from various parts of the State, being possibly somewhat more numerous from the Piedmont section.

Whatever its nature, the disease is not infectious or communicable.

One of the objects of this paper, besides calling the attention of your Board to what seems a distinct pathologic entity, is to ask your co-operation in directing the attention of general practitioners to its symptoms and occurrence and thereby gain a fuller knowledge of its distribution, causation and prevalence than is possible for isolated observers like ourselves.

PART I. GENERAL. WHAT ARE PELLAGRA AND PELLAGROUS INSANITY?

Definition and Description.—What then is pellagra? Van Harlingen¹ calls it "A complex disease characterized by three classes of symptoms:

- "1. A squamous erythema confined to those portions of the skin which are exposed to the action of heat and light.
- "2. A chronic inflammatory condition of the digestive passages shown chiefly by obstinate diarrhoea.
- "3. A more or less severe lesion of the nervous system, leading at times to mental alienation and paralysis. These various symptoms are at first insignificant, and in a certain way periodic; they begin or recur in spring, and diminish or disappear in winter. Later, they become persistent, more and more marked, and finally terminate fatally."

Griesinger², in 1861, after seeing cases of pellagra in the asylums of Northern Italy, doubted the specific nature of the disease, but thought that in its final state it greatly resembled general paralysis of the insane.

In 1883, Spitzka³, of New York, announced in his excellent treatise on insanity:

"Pellagrous insanity will not be discussed in this volume, as it does not occur in America, and is limited to such countries as Italy, where maize forms a staple article of diet and where the disease

known as pellagra, which is attributed to the living on spoiled maize, occurs in an endemic form."

Says Manson⁴, in 1907:

"Indeed, there are vast regions in which maize is extensively cultivated and much eaten, but in which pellagra is absolutely unknown. A most convincing example is that of the United States of America."

Says Tyson⁵, in Ziemsen's Cyclopedia:

"Pellagra is a disease which is thought to be due to a fungus which infects maize or Indian corn. It occurs particularly in Lombardy and is characterized by a scaly and wrinkled condition of the skin, especially of those parts exposed to the air. The strength and mental faculties are affected. Sensation is obtunded and cramps and convulsions supervene, much as in ergotism."

Macpherson⁶, in 1899, expressed the opinion that:

"Pellagra is a disease of the nervous system accompanied by mental symptoms and followed often by degeneracy in the descendants. This transmitted degeneracy is characterized by mental and physical feebleness and a marked predisposition to the recurrence of the affection in the predisposed offspring. The disease is common in the southern parts of Europe, especially in Italy, and has been indubitably traced to the eating of immature and otherwise unwholesome maize."

From Mendel⁷, of Berlin, we learn that:

Pellagra "shows in the prodromal stage general distress, fatigue easily brought on, disturbances of digestion, usually with areas of redness of the skin, which is chapped, cracked, and deprived of epithelium. The second stage is dominated by pathological phenomena of the intestinal tract, and the third stage shows, besides disturbances of the nervous system (weakness and pareses, paresthesias and anesthesias, weakening of the cutaneous reflexes and exaggeration of the tendon reflexes), a melancholic depression, which often passes to the stuporous form."

It will thus be seen that true pellagra appears to be akin on the one hand to ergotism and lathyrism, and on the other to the parietic forms of insanity, while in some of its manifestations it is not unlike acute delirium.

History.—The earliest account of this malady as an endemic affection comes from Spain, where it was recognized in 1735. It appeared in Italy just prior to 1750, and was first scientifically investigated in 1771. It first appeared in Southwest France in 1829. Its present distribution embraces the districts of Europe situated within a zone

extending from 42° to 46° N. It is found also in Egypt and Asia Minor.

The disease attacks males and females indiscriminately and no age is exempt. Cases are on record of children of fourteen months and two and a half years of age. Under sanitary and preventative management, it is claimed that pellagra has almost disappeared from France, but there are in Italy 100,000 cases of the disease, that is, 10 per cent. of the rural population. About 10 per cent. of pellagrous cases become insane. It is said that there are upwards of 50,000 cases of pellagra in Roumania. Sandwith found it in 1900 among the colored lunatics on Robben Island.

There is a voluminous literature on the subject in Italian, French and German, as is shown by over eight pages of bibliography, in Volume XII, Second Series, of the Index Catalogue of the Library of the Surgeon General's office in Washington. But in English, outside of the short accounts or definitions of the disease in the textbooks, articles are few and far between.

Although recognized now as existing in Yucatan and Campeche, as well as in Brazil and the Argentine Republic, pellagra has rarely been reported as being found in the United States.

In April, 1907, however, Dr. G. H. Searcy^s read before the Alabama State Medical Association an account of an epidemic of acute pellagra in the State Hospital for Colored Insane, at Mt. Vernon, Alabama. Since the opening of the hospital, in 1901, three or four cases of a strange and fatal skin disease had occurred, but its true classification was not recognized. In the late summer and early fall of 1906 the epidemic appeared. In all, 88 cases occurred, with 57 deaths, a mortality of about 64 per cent. Since the observation of these cases among the colored insane patients, some four or five others have been recognized among the white patients at the Tuscaloosa (Alabama) Asylum.

In the report for 1907 of the Alabama Insane Hospitals, Dr. J. T. Searcy, Superintendent, just received, it is stated that: "There was last fall (at the Mt. Vernon Hospital) an epidemic of pellagra, which was very fatal. This being a heretofore unknown disease in America, it was not recognized as such for some time. Cases have, since then, been brought into both hospitals from different parts of the State, showing that it occurs in this part of the country. There have been nine deaths at the Bryce Hospital during the past twelve months from pellagra, five of them were infected when they came."

A sporadic case diagnosed as pellagra was reported by T. C. Merrill⁹, M. D., of Colorado, Texas, in September, 1907.

Symptoms.—Usually the disease first manifests itself in the spring, the earlier symptoms pointing to the gastro-intestinal tract and the cutaneous structures, while the later and more advanced symptoms involve the cerebral and cerebro-spinal systems.

In his monograph (1903), Procopiu¹⁰ gives this definition:

"Pellagra is a periodical disease, having remissions and exacerbations. It manifests itself in persons exposed to its invasion at the beginning of spring, becomes more aggravated until summer, and then begins to lessen little by little to the point of giving during the winter the illusion of cure. It returns each year at the same season, so long as the cause persists; that is, the eating of the products of Indian corn."

Says Radcliffe-Crocker¹¹, in substance.

At first there is weakness and lassitude, giddiness, headache, articular pain, severe pain in back, radiating to the limbs, especially the hands and feet; the tongue is furred, the epigastrium tense and painful, and the bowels are loose, sometimes with slight jaundice. The skin of the forearms, elbows, face and neck are affected with dermatitis. The erythema may develop in 24 hours and last ten to eighteen days. It consists of a diffuse bright, dark or livid red erythema, which disappears on pressure unless hemorrhagic. The skin is swollen tense and itches when exposed to the sun. After two weeks the erythema subsides; desquamation follows, leaving the skin thickened and pigmented. The nails and hair are unaffected. After several attacks the skin dries, withers and wrinkles. The skin manifestations thus present three stages: (1), congestion; (2), thickening and pigmentation; (3), atrophic thinning.

Upon recrudescence after the first attack the patient becomes emaciated and weak, with headache and pain in back, and tenderness on pressure near the dorsal vertebrae; the knee jerk is exaggerated. The tongue gets denuded, is red and dry; there is a burning sensation in the mouth; deglutition is painful; diarrhoea increases to profuseness; all the cerebro-spinal symptoms, many of them meningeal, are aggravated, and the patient is delirious, sinks into a typhoid state and dies.

Mental Symptoms.—These usually assume the type of melancholia. The milder forms show merely a retardation of ideas, disinclination for thought and activity or simple mental depression. Later, the disease may advance to a profound melancholia, even refusal of food,

and suicidal tendencies manifesting themselves. Maniacal symptoms are rarer, but sudden outbursts of delirium or excitement may occur in cases of apparent stupor.

Clerici¹² (1855) described pellagrous insanity as consisting of "a vague, incoherent delirium, accompanied by stupor, loss of memory, and by loquacity without special disorder of intelligence or violent excitement."

Pellagrous insanity is divided by Procopiu¹³ into acute and chronic delirium. The acute delirium may be associated with alcoholism, when it presents the symptoms of delirium tremens. Or acute delirium may manifest itself in the course of chronic delirium. In the latter case the patient who has been quiet and apathetic becomes restive, as if tormented by an obsession. The delirium may become furious, leading to suicide or murder. Intense religiousness may be a symptom, or food may be refused. The chronic delirium has been divided into the melancholy, demented and stuporous types, but they are usually melancholy of an anxious type. The termination is dementia.

"Pellagrous insanity," says Regis¹⁴, "is one of the most grave varieties, not in itself, but because it is the expression, in the sphere of intelligence of a general disease, progressive in its course and inevitably ending in cachexia and death."

Says Warnock¹⁵:

"The frequent early occurrence in pellagra of symptoms of dementia, with loss of memory and childishness, points to organic brain disease, and reminds one of the mental condition of patients suffering from organic dementia due to gross brain lesions, and of the later stages of general paralysis. Indeed, the last stage of a general paralytic of the melancholic type and that of a pellagrous patient have many resemblances to one another."

Etiology.—Among the abandoned theories about the origin of pellagra may be cited those of its being an expression of leprosy, scurvy, syphilis or alcoholism.

Tuczek¹⁶ concludes that "pellagra is due to certain toxic substances developed in the course of the decomposition of Indian corn, and possibly under the influence of epiphytes on the corn." "The maize cut before it is ripe, gathered in rainy seasons, stored away damp, sown from affected seed, * * * all contribute to the engendering of some toxic development in the grain, which forms the true pellagrous poison."

From the dermatologist's¹⁷ side it may be cited :

"Pellagra is believed to be due to the consumption for long periods of time of damaged maize, this being the staple article of food in most of the countries where the disease is endemic. The eating of the grain harvested before it is fully ripened, particularly in regions where famine has existed—the harvests are poor and the lower class of the rural population live in insalubrious conditions—is the chief factor in the production of the malady.

"Persons of both sexes and all ages are liable to contract the disease; heredity is supposed to exert an influence, especially when the nervous symptoms of the malady are predominant. The sporadic cases occurring where there has been no suspicion of ingestion of improperly prepared food are believed to represent a 'pseudo-pellagra' having a wholly different etiological history."

A sample of the meal used at the Mt. Vernon (Alabama) Hospital¹⁸, which was supposed to be the best Western meal, was sent to the pathologist in charge of the Laboratory of Plant Pathology at Washington and he reported that "the meal was wholly unfit for human use; that it was made of mouldy grain and contained quantities of bacteria and fungi of various sorts, some of which were identified."

Dr. Merrill¹⁹ also referred some of the corn meal that had formed his patient's diet to the Laboratory of Plant Pathology at Washington. The pathologist reported that the meal was unfit for regular diet being "unquestionably in bad condition and too rancid to eat, at least for a regular diet."

Radcliffe-Crocker²⁰ sums up the etiology alliteratively: Peasant life, poverty and polenta (a food made from maize).

"Pellagrous insanity," says Bianchi²¹, "is a disease arising from intoxication of the nervous system," and, further, that "Ceni and Besta concluded that both *penicillium glaucum* and *aspergillus fumigatus* play a very important part in the etiology of pellagra, and that their action can be explained only by their determining phenomena of progressive intoxication by means of the toxins they set free in the gastro-intestinal canal."

But, after all that has been said and written upon the etiology of pellagra, there seems yet to be doubt as to the ultimate cause, as witness this extract from Novy, in Osler's²² *Modern Medicine* (1907):

"While there is no question as to the fact that the poisoning is due to corn, the actual cause, notwithstanding the numerous investigations which have been made, is by no means established. It is rea-

sonable to believe that the specific toxic products are formed by the action of some bacterium on the maize which has been cut while immature and stored in damp condition."

Diagnosis.—In cases²³ where the nervous symptoms are especially prominent the diagnosis has to be made from neurasthenia and hysteria. Here we must consider etiology. While the history, periodicity in the spring and increased knee-jerk will help distinguish between the affections. The exanthem may be absent, but when present without other symptoms it must be distinguished from pure solar erythema. The condition of the tongue and intestinal tract will assist in the diagnosis. If the spinal symptoms primarily attract attention, the coincident mental disorder, the erythematous eruption, and the gastro-intestinal lesions will determine between pellagra and a pure neurosis.

Other diseases to be excluded are: Ergotism, lathyrism, beriberi, scurvy, eczema, lichen, uncinariasis (hookworm disease), acute delirium, alcoholism, syphilis and paresis. In brief, *pellagra* may be said to present a triad of symptoms: Dermatitis, diarrhoea and depression. The more prominent skin symptoms are erythema, dessication and desquamation; those of the digestive system; salivation, dyspepsia and diarrhoea; and of the nervous symptoms—headache, backache, spasms, paralysis of legs and melancholia. In our colored patients the dermatitis, diarrhoea, and consequent emaciation, as well as the dementia and paresis, have been strikingly well marked. The disease sometimes does not show the eruption when the condition *pellagra sine pellagra* is said to exist.

Pseudo-pellagra.—There seem to be several forms so-called. One form occurs in chronic alcoholism, with peripheral neuritis, and is said sometimes to appear in asylums among the demented and general paralytics. In the latter case it is more likely a pseudo-general paralysis, since true paresis does not present the skin or intestinal lesions of pellagra. Another form is a pure solar erythema, without intestinal or nervous symptoms.

To quote from Manson again:

"The disease is pellagra when it fits in with the orthodox theory and when it can be connected in any way with maize; but when this is not possible, the disease becomes 'pseudo-pellagra.'"

Ergotism.—History of diet (usually rye), headache, vertigo, mild delirium, blindness, deafness, anaesthesia, cramps, convulsions and gangrene.

Lathyrism.—History of diet (vetch), pains in the kidneys and lower extremities, spastic paralysis, possibly paraplegia, increased knee-jerk, ankle clonus; intelligence clear.

Scurvy.—History of food conditions, earthy complexion or jaundice, depression, both nervous and mental; pain in limbs and joints, indurative and ecchymoses; visceral hemorrhages, stomatitis.

*Beriberi*²⁴.—Peripheral multiple neuritis, edema or emaciation, severe effusions, slight hydrothorax, general dropsy, ataxia, partial paralysis, great muscular weakness; knee-jerk lost or impaired, ankle-drop, palpitation, precordial distress, pericardial effusion, systolic bruits, violent carotid throb, anaesthesia in pretibial region and hyperesthesia in calf and other groups of muscles; general health good; may be dyspepsia, but tongue clear and bowels fairly regular; urine may be scanty, but otherwise normal; no fever; intellect not involved. *Filaria*, *ankylostomum* and other worms are very commonly found in beriberi. Manson concludes that beriberi is a germ disease, but probably not communicable from man to man.

Lichen.—Roundish papules, small or large, chronic in course and appears on anterior surfaces of arms above wrists, lower part of abdomen, calves of legs and around knee. It may appear on palms of hands, and soles of feet. Hair and nails unaffected. General nutrition never affected in *L. planus*, prognosis favorable, with tendency to spontaneous recovery.

Eczema.—The common symptoms of infiltration and thickening of the skin, with exudation and itching, which characterize this disease, are not associated with the conditions of the gastro-intestinal and central nervous systems which make up the clinical picture of pellagra.

Acute Delirium.—Fever, delirium, great motor excitement and rapid exhaustion, ending frequently in coma and death. Duration from ten days to three weeks. No cutaneous or intestinal lesions.

Hookworm.*

*Diagnostic symptoms as dictated by Dr. Ch. Wardell Stiles of the U. S. Public Health and Marine-Hospital Service.

More or less pronounced anaemia followed by rapid exhaustion. Tallow-like skin in which you seem to see through the upper into the lower layer. There is an absence of perspiration which is frequently complete. The skin and hair are dry. The heart is found to be enlarged, with the apex beat displaced. Haemic murmurs are common, as are also cervical pulsations. There is usually considerable abdominal tenderness shown by even slight pressure on the epigastric region. This tenderness has the decided tendency to con-

tinue, on palpation, towards the right, but disappears towards the left side.

About 60 per cent. of the cases show scars on the shin with the history of sores of long standing. About 85 to 95 per cent. give history of "ground-itch." In cases in which the anaemia began before puberty there may be total absence of hair in axillary and suprapubic regions. In affected females the menses are retarded and irregular and rarely accelerated.

The symptom of "pot-belly" is common, though not as common as is usually supposed. The pupils are usually dilated, even when facing a strong light. If not dilated, they dilate very readily when looking into the observer's eye, and sometimes even when facing a strong electric light. The most pronounced mental symptom as a diagnostic aid is a low grade of mentality—or rather of dullness or stupidity—as indicated by repeating a question or asking that it be repeated. This is exceedingly common. This dullness, however, is cleared up in a striking manner after the exhibition of thymol. The tendency is to constipation rather than to diarrhoea, though some cases have diarrhoea. The seasonal periodicity shows an acceleration in summer and fall. The disease is much more common among people in sandy regions than in clay regions. Usually if one case occurs in a family several others are found infected.

Pellagra, or at least pellagrous symptoms, may be associated with some of the above-mentioned diseases, as well as with malaria, tuberculosis, traumatism and the eruptive fevers, such as typhoid or diphtheria. Here the diagnosis is to be made only after careful exclusion. The diagnostic symptoms of the other more common diseases mentioned need not be introduced here.

Prognosis.—The disease may run an acutely fatal course or an extremely slow one. (Searcy.) Our experience has been that after admission to the asylum the duration of cases will scarcely average six months. Cases having severe diarrhoea, emaciation and delirium run a rapidly fatal course in spite of the usual treatment. In Europe, it is said, pellagra may run through ten or fifteen years. Recovery can be expected only when the patient has passed through one or two annual spring attacks, is removed from the cause, and is placed in hygienic surroundings. If the disease is far advanced, the prognosis is unfavorable, as it is also when permanent nervous lesions appear, such as chronic insanity or motor paresis.

*Pathology*²⁶, *General*. Wasting of adipose and muscular tissues, *fragilitas ossium*, degeneration of the cardiac muscular tissue, fatty degeneration and atrophy with slight degree of sclerosis of the liver, spleen and kidneys.

Constant.—(a), intestinal, atrophy of muscular coat, with occasional hyperemia and ulceration of lower part of tract; (b), abnormal pigmentation (like senility) of ganglionic cells, muscles of the heart, the hepatic cells and the spleen; (c), changes of nervous system. By far the most important and constant *post mortem* signs: Hypere-mia, anemia, or oedema, of central nervous system; pachymenigitis; cerebral and spinal leptomenigitis; obliteration of spinal canal. Most noteworthy and constant: Degeneration and secondary proliferation of the lateral columns of spinal cord in dorsal region, but also of posterior columns in cervical and dorsal regions.

Treatment—The questions of prophylaxis and treatment although of highest importance, do not properly come within the scope of this inquiry, but may be summed up in the fundamental principle of discovering and removing the cause.

In Europe the usual method is to prohibit corn in any shape and form as food, or, if this is impossible, permit the use of only such grain as is ripe to perfection, is well dried and stored and which is the result of sowing of good quality. The cultivation and use of other cereals is to be encouraged.

The nervous symptoms of the disease are treated according to general therapeutic indications. There is no specific. If hookworms are found associated with pellagra they should be removed by thymol.

Before taking up the consideration of our cases this paragraph taken from Warnock's²⁶ paper on *Pellagrous Insanity* will prove interesting:

"Pellagra is never uncomplicated in the stage seen here (in the Cairo, Egypt, Asylum). Every patient suffers from parasitic diseases. Favus, often producing complete baldness, is frequently present. The anchylostomum worms are always present and the resulting extreme anaemia accounts partly for the great prostration of these cases. Other intestinal worms often occur. Bilharziosis of the rectum or bladder affects many cases and further aids the development of the anaemia and exhaustion. In fact, it is a matter for astonishment that an individual preyed on by so many kinds of parasites is able to survive so long. Many of these patients have a dried-up, wizened look, suggesting that of a mummy."

Furthermore, as to the likelihood of erroneous conclusions by reason of secondary or accidental association with hookworms, this quotation from Manson's *Tropical Diseases*, fourth edition, in regard to beriberi, is pertinent:

"The novice in tropical medicine will be greatly puzzled for a time over these cases." * * * If he "examine the blood of these patients, possibly in a proportion of them he will find *filaria nocturna* or some other blood worms; very likely he will then think that the cases are forms of *filariasis*, and he may construct theories to explain how the filaria produces the symptoms. Or, if he examines the feces, very probably in over 50 per cent. of the cases, or in some countries in nearly all the cases, he will find the ova of *ankylostomum duodenale*, and, probably, those of *trichocephalus dispar* also. On this evidence he may conclude that these are cases of *ankylostomiasis*. He had better, however, not commit himself to such a diagnosis until he has ascertained how it fares with the rest of the population as regards these parasites, for he will find that the filaria, the *ankylostomum*, and the *trichocephalus* are quite as prevalent outside as inside the hospital and in the healthy as well as in the sick."

In 1902, Dr. Harris²⁸, of Georgia, reported a case of *ankylostomiasis* presenting the symptoms of pellagra, of which an abstract is appended:

"A farmer, first seen March 8, 1902, unmarried, aged 29 years, native and resident of Georgia. The patient had been reared in unusual poverty, the bread, constituting his principal diet from infancy, being always made of home-raised Indian corn. When first seen his health had been bad in spring and summer for 15 years, as manifested by malaise, loss of appetite, thirst, melancholia and weakness and anaesthesia of legs. Later, skin over hands, arms and dorsal surfaces of feet became inflamed, blistered and covered with scabs; was constipated. Examination disclosed decided cachexia. *Ankylostomum* worms found, and large number expelled by thymol. Later, examination showed their absence. Patient reported that he was at first improved, but later that he was no better than he was before treatment."

Dr. Harris writes that, having lost sight of this patient, he can give no subsequent history.

PART II. LOCAL. DOES SUCH A DISEASE EXIST IN SOUTH CAROLINA, AND WHAT ARE ITS CAUSES?

Case I., M. C.—Admitted to the State Hospital December 9, 1907; white; female; American; housekeeper; age 30 years; married 11 years; three children; no miscarriages; in this State one year; previously for three years in Cleveland County, N. C. Previous history—Family very poor, but patient was healthy up to five years ago, when menses ceased. In spring three years ago rash appeared on back of hands like sunburn, which spread in spite of treatment. Got better in cold weather, but never entirely healed. Family produced all the corn they used. None of family or neighbors have had "eczema," but family physician said he had had a similar case. Patient developed symptoms of mental depression about two years ago, which subsequently have been continuous. Bowels have been constipated with occasional diarrhoea, the latter having been constant and severe for three months before admission.

On Admission.—Extreme adynamia; stupid appearance; reluctance to exertion; sat with bowed head and spoke in monosyllables and only when spoken to; muscular system fairly preserved; axillary and suprapubic hair present; poor appetite, but intense thirst; temperature 97 degrees; pulse 80, regular and full; respirations 20; urine normal, as shown by repeated examinations; blood examination showed a relative increase of lymphocytes and a moderate degree of anemia.

Gastro-Intestinal.—Abdomen flat; exhausting diarrhoea, sometimes as many as twenty stools a day, light yellow to copper color; hookworms and eggs found by several observers.

Skin.—Slightly jaundiced; eczematous condition covered forehead, also alae nasi, malar bones, and chin, as well as dorsal surfaces of hands and feet; very scaly and rough on exterior surface of elbows and knee; no sores or scars on shins; most of these regions were chapped and fissured; anaemic and puffy about eyes.

Mouth.—Foul breath; tongue, deep red and clean, straight and not tremulous.

Lungs.—Normal.

Heart.—Accentuated aortic second sound.

Nervous and Mental.—Tendon reflexes exaggerated; tabetic gait; stiffness of muscles; dull and melancholy; suspicious about food; occasionally mildly excited; pupils react to accommodation and slightly to light; has slightly lost ground physically and mentally since admission; has on an average 20 light yellow stools in 24 hours;

has become more and more paretic, so that she had to be put to bed; temperature varies from 96 degrees to 99 degrees; January 1, 1908, she was given thymol, grains 15; repeated January 12; has made an assault on an old woman sleeping in room with her.

After studying this case, Dr. Stiles's comment was:

"If this is hookworm disease, its symptoms are entirely different from those I am familiar with, and without microscopic examination I should place her in the doubtful class as regards uncinariasis."

Case II., R. P.—Admitted to State Hospital December 2, 1907; colored male; age 30 years; history meagre; mother is said to have died of old age; mental symptoms developed slowly; history of apoplectic seizures; at times was incoherent and profane; mind ran much on religion; diarrhoea for three months and eruption appeared on hands three months before admission.

Physical Examination.—Patient very emaciated and anaemic; deep reflexes somewhat exaggerated.

Heart.—At times soft, blowing systolic murmur; normal in size and position.

Lungs.—Negative.

Abdominal Organs.—Normal except a slight enlargement of the spleen. Some slight tenderness upon palpation over abdomen. Cervical and inguinal glands somewhat enlarged.

Skin.—The forehead and face, especially over malar bones and the backs of the hands, present an erythema to squamous, eruption, cracked and fissured.

Mental Symptoms.—Those of depression and apathy; a marked indisposition to exert himself.

Temperature.—Either normal or slightly subnormal; pulse average 76; respirations 20; appetite poor; sleep normal; very persistent diarrhoea, not yielding at all to the usual modes of treatment; tongue and buccal cavity red, but with no tendency to hemorrhage.

Died from exhaustion December 22, 1907.

Case III., L. D.—Admitted to State Hospital October 1, 1907; colored woman; age 34 years; housewife.

Previous history.—Married 20 years; eight children; no miscarriages; in poor health six years; worried over death of two brothers; eruption appeared on face and hands two months before admission; no diarrhoea then; mind affected two weeks before admission; ten in family, but none of them had skin trouble, but woman neighbor had similar trouble, from which she died; produce the corn they use, except a little grits.

On Admission.—Extremely weak; paretic symptoms; increased knee-jerks; muscular wasting.

Heart.—Systolic murmur at base.

Lungs.—Negative.

Skin.—Forehead, nose, malar prominences and chin covered with an eczematous eruption; dorsal surfaces of hands and feet and of elbows and knees, much thickened, darkened, chapped and fissured.

Obstinate and exhausting diarrhoea. Died of exhaustion December 26, 1907.

Case IV., Mrs. D. R. C.—White; seen in consultation with Dr. J. J. Watson April, 1906; age 46 years; married; no children; no specific history; in good health till 18 months previously; then she became sleepless and "nervous," contrary to her habit; soon afterwards she noticed a general weakness and an erythema appeared on the backs of her hands, extending from the metacarpo-phalangeal articulation to three or four inches above the wrist; no eruption on face, forehead, neck or feet; examination showed heart, lungs and other organs normal, and this conclusion was confirmed by careful and repeated examinations; pulse persistently between 90 and 100; temperature, morning 97, afternoon 98 to 99.2; skin on dorsal surfaces of hands extending above wrists showed a pigmented, harsh and scaly condition; patella reflex exaggerated; tenderness over spinal column in mid-dorsal region; right pupil dilated.

Nervous Symptoms.—Persistent, dull, vertical headache; was neurastheric hypochondriacal and melancholy; no diarrhoea, bowels regular; under best hygienic and medical treatment for eight weeks; she did not improve; since then she has been lost sight of.

Dr. D. S. Pope, of Columbia, recalls these cases, the records of which have been lost:

"About 15 years ago I had under my care at the South Carolina Penitentiary a case presenting this history:

"*Case V.*—White man; 40 years old; developed a crimson rash on the forehead and dorsal aspects of the hands. It was thought he had erysipelas, but it yielded very slowly to the usual treatment. The next spring the eruption returned in the exposed surfaces and extended to the cheeks, but it became of a squamous nature. He at this time developed an obstinate diarrhoea and the mental symptoms of melancholia. All treatment, including stimulation, proved of no avail. He became gradually exhausted and died during the late spring.

"*Case VI.*—About the same time I saw in private practice a white woman about 50 years of age, who had a scaly eruption on cheeks, backs of hands and neck and a severe intractable form of diarrhoea. She was restless and delirious, and for this reason I was called in by the family to decide whether she was properly a subject for commitment to the Asylum. We got a nurse and kept her at home, but she died from an exhausting diarrhoea about two years from the time the eruption was first observed."

The appended histories and observations are furnished us by L. K. Philpot, M. D., of Columbia, physician to the Epworth Orphanage, an institution located in the suburbs of Columbia, and having an average of 150 white inmates, who come from every portion of the State:

"I hand you herewith reports of some interesting cases of what clinically might be termed 'eczema,' but which also present symptoms of other pathological conditions:

"*Case VII., Lilian M.*—Age six years; history was that of a healthy child, quiet and of average intelligence; father died at 50 years of age of unknown cause; otherwise no family history obtained.

"*Clinical History.*—An eczema with reddish base appeared upon the dorsal aspects of feet, ankles, hands, wrists, forehead, cheeks and neck. The portions of the body covered with clothing were not eczematous. This condition continued for several months, when she developed diarrhoea and began to lose flesh and strength. Shortly afterwards she began to show nervous and mental symptoms not unlike those of spinal meningitis. While sitting up she would gradually go forward until her head reached the floor or she would fall from the chair. Varied treatment, including specific remedies, produced no effect. Finally, hookworms being found in her stools, she was given thymol and made a complete recovery.

"*Case VIII., Avery J.*—Aged 10 years; father and mother living and healthy. This child was well developed, both physically and mentally. A red scaly eczema appeared on the dorsum of both feet and hands, the ankles, wrists, forehead, cheeks and neck. No skin lesion on parts protected by clothing. He developed a diarrhoea, lost strength and flesh until he became a living skeleton. His condition did not yield to any treatment either local or general. At this time hookworms were found in very large quantity, but he was too feeble to take the usual treatment. He developed mental symptoms of a stuporous type and died of exhaustion.

"*Case IX., Morris L.*—Aged nine years; a rather delicate child, with no history. She too developed a scaly red eczema of the feet, hands, forehead, cheeks and neck. Lost strength and flesh. After some months she developed violent insanity, with symptoms of a spinal meningitis, and died.

Until within a few days of the death of Cases VIII., and IX., I did not know how to find the hookworms nor did I suspect that this parasite was the cause of the conditions of my patients. At this time I met Dr. Ch. Wardell Stiles, of the United States Public Health and Marine-Hospital Service, and had him examine all the children at the Orphanage. In 25, showing signs of eczema, the hookworm was found. By the exhibition of thymol the children were relieved not only of hookworms, but of eczema also. They have since been in good health.

The clinical histories of the three cases above cited, presenting the combined symptoms of eczema, (ground-itch) exhausting diarrhoea and delirium, show to my mind what would have been the fate of the other 25 but for the timely eradication of the hookworm."

We have had accounts of similar cases from other physicians, but have not been able to obtain their written histories in time for this paper.

We have had, besides, other cases in the State Hospital, which help to give us a clearer clinical picture of the disease, but the records of them are not complete enough to be included.

We are aware that the histories and notes on our cases are not as full as we should like, but we feel justified in making a preliminary inquiry and incomplete report at this time in order that it may be presented to your Board, so as to be included in your transactions for 1907.

We also recognize that we are standing upon debatable ground, and that while the questions we are raising may be somewhat novel in America, yet the problem of the origin and existence of pellagra as a pathological entity is an old or even a trite question in certain European countries.

Finally, answering the queries at the heading of this paper we feel justified in concluding from the evidence presented:

1. That true pellagra is a disease long known in Southern Europe, due to eating defective Indian corn and manifesting itself in the spring by intestinal, skin and mental or nervous symptoms.

2. That pellagrous insanity is a mental condition usually of the melancholy type, developing in patients already suffering from pellagra as shown by the pre-existing skin and intestinal lesions.

3. That we are satisfied that a pellagroid disease occurs in South Carolina, but whether it is the true pellagra of Italy remains to be proven, as our observations, though very suggestive, are as yet too few for a final opinion.

4. That while the conditions described do not harmonize entirely with the descriptions of Italian and French pelagra—especially as regards the season of the year—yet at least it very closely resembles Egyptian pellagra, even to the association with the anchylostomum worm.

5. That the condition we are dealing with is not the form of pseudo-pellagra sometimes described since it does not stop at the erythematous stage, but presents the triad of symptoms—dermatitis, diarrhoea and depression.

6. That a form of mental disease has come under our observation that in its clinical aspects is identical with pellagrous insanity.

7. That the discovery of the hookworm in some of our cases is a most interesting association with the disease, but whether etiological or not demands further inquiry.

8. That the probable occurrence of such a disease in South Carolina having been established, further clinical and pathological research is called for.

9. That the relationship between mental symptoms and hookworm disease (uncinariasis or anchylostomiasis)* and kindred diseases, especially in the Southern States, should also be a subject of further investigation²⁹.

In justice to ourselves we may be permitted to state that we had arrived at the diagnosis of pellagra for our cases before we learned of the contributions of Searcy and of Merrill, published in The Journal of the American Medical Association of this year. That is, we had been working at the problem independently, and did not know of the observation of probable pellagra in the United States until

As this article is going to press a paper on "Uncinariasis," by Dr. William Weston, of Columbia, appeared in the December number of The Journal of the South Carolina Medical Association, in which a case is described showing such mental symptoms that lunacy commitment papers were being taken out, but hookworms being found, commitment was delayed. On the removal of the hookworms the mental symptoms completely disappeared.

we had completed our own observations, arrived at the above conclusions and reported them orally to your President and Secretary, and were arranging them in their present form when our attention was called to the recent papers above referred to and now quoted from in this paper. The paper of Dr. Harris, of Georgia, is of especial interest not only as being one of the few cases of suspected pellagra reported as developing in the United States, but also because of its association with hookworm.

The report of the Alabama hospitals came as our paper was going to press. To all of which we acknowledge our indebtedness as strengthening the position we have taken in concluding that pellagra has existed, unrecognized, for some time in our State.

We wish especially to express our obligations to Doctors J. J. Watson, D. S. Pope and L. K. Philpot, of Columbia, and to Doctors Robert Wilson, Jr., Chairman, and C. F. Williams, Secretary of your Board, for advice and assistance regarding our problem as well as in determining upon the best method of laying the matter before the profession of our State. Dr. Ch. Wardell Stiles, of the United States Public Health and Marine-Hospital Service, also studied one of our cases and encouraged us in the work we were trying to do.

Our thanks are also due to Dr. G. T. Tuttle, Superintendent of McLean Hospital, Waverley, Mass; to Dr. W. H. Doughty, Jr., of Augusta, Ga., and to Drs. Walter D. McCaw and Robert Fletcher and Mr. H. O. Hall, of the Army Medical Museum and Library, Surgeon General's office, Washington, for their courtesy in lending valuable books and securing information not otherwise obtainable by us.

Respectfully submitted,

W. W. RAY, M. D.,

J. H. TAYLOR, M. D.,

Regents;

J. W. BABCOCK, M. D.,

J. L. THOMPSON, M. D.,

H. H. GRIFFIN, M. D.,

ELEANORA B. SAUNDERS, M. D.,

Staff.

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1. Van Harlingen, A., *Ref. Handbook of Med. Sci.*, Vol. V, p. 305.
 2. Griesinger, W., *Mental Pathology*, p. 194.
 3. Spitzka, *Insanity*, pp. 124, 125.
 4. Manson, Sir P., *Tropical Diseases*, Fourth Ed., p. 336.
 5. Tyson, J., *Ziemsen Cyclopedia, Supplementary*, Vol. XVIII.
 6. Macpherson, J., *Mental Affections*, p. 13.
 7. Mendel, E., *Psychiatry (Krauss's Trans.)*, p. 234.

8. Searcy, G. H., Jour. Am. Med. Assoc., XLIX, I, p. 37.
9. Merrill, T. C., Jour. Am. Med. Assoc., XLIX, II, p. 940.
10. Procopiu, G., La Pellagre, Paris, 1903, p. 75.
11. Radcliffe-Crocker, H., Dis. of the Skin, p. 150.
12. Clerici, Quoted from Griesinger, Op. Cit.
13. Procopiu, G., Op. Cit.
14. Regis, E., Mental Medicine (Bannister's Trans.), p. 387.
15. Warnock, J., Jour. of Ment. Sci., Vol. XLVIII.
16. Tuczek, T., Tuke's Dict. of Psych. Med., Art. Pellagra.
17. Hyde and Montgomery, Dis. of the Skin., p. 214.
18. Searcy, G. H., Loc. Cit.
19. Merrill, T. C., Loc. Cit.
20. Radcliffe-Crocker, H., Loc. Cit.
21. Bianchi, L., Phychiatry (Macdonald's Trans.), p. 760.
22. Novy, Osler's Mod. Med., Vol. I, p. 245.
23. Tuczek, T., Abstracted from Op. Cit.
24. Manson, Sir P., Tropical Diseases, Abstract.
25. Tuczek, T., Abstracted from Op. Cit.
26. Warnock, J., Loc. Cit.
27. Manson, Sir P., Loc. Cit.
28. Harris, H. F., Trans. M. Assoc., Georgia, 1902, p. 220.
29. See Bulletins 10, 25, 28 and 38, by Ch. Wardell Stiles, F.A. D.; U. S. Public Health and Marine Hospital Service; Walter Wyman, Surgeon General, Washington, D. C. Also consult Manson's "Tropical Diseases," Fourth Edition.

NUMBER OF REPORTS RECEIVED FOR MONTH OF NOVEMBER, 1907.

[illegible]

MORTALITY REPORT FOR THE MONTH OF NOVEMBER, 1907.

The following table shows, in alphabetical order, the total number of deaths from all causes reported to the Board during the month of November. From the number of reports received and the number of physicians in the State an approximate accuracy, as to the total death rate, can be reached by multiplying the figures below by two and one-fifth.

Abcess of brain	1	Intestinal obstruction	1
Alcoholism	1	Intussusception	1
Anchylostomiasis	1	Malarial fever	18
Aneurism arch aorta	1	Marasmus	2
Angina pectoris	2	Meningitis, cerebral	3
Apoplexy	12	Meningitis, Cerebro-spinal	3
Appendicitis	2	Myelitis	2
Arterio sclerosis	1	Myocarditis	4
Bronchitis, capillary	3	Nephritis, acute	3
Burns	10	Nephritis, chronic	18
Cancer, form not stated	3	Oedema of lungs	2
Cancer of breast	2	Osteo-myelitis	1
Cancer of liver	1	Paralysis	10
Cancer of stomach	2	Peritonitis	5
Cancer of uterus	2	Pneumonia, broncho	14
Cholera infantum	3	Pneumonia, hypostatic	3
Croup, membranous	5	Pneumonia, lobar	25
Deformity, congenital	2	Premature births	6
Diabetes mellitus	2	Puerperal peritonitis	1
Diphtheria	10	Puerperal septicaemia	3
Dysentery	2	Pyæmia	1
Eclampsia	4	Pyohalpingitis and peritonitis	2
Electric shock	1	Rheumatism	2
Endocarditis	3	Sarcoma, glands of neck	1
Enteritis	3	Scarlet fever	3
Entero-colitis	2	Septicaemia	3
Gall stone	1	Syphilis	5
Gangrene	1	Tetanus	3
Gastritis	1	Tuberculosis, pulmonary	42
Gastro-enteritis	3	Tuberculosis of intestine	2
Gastric ulcer	1	Tubercular peritonitis	1
Heart, valvular lesions of	23	Tubercular meningitis	3
Hemorrhage from hemorrhoids	1	Typhoid fever	29
Hemorrhage, post partum	1	Uraemia	2
Hydrocephalus	2	Violence, accidental	4
Inanition	1	Whooping cough and pneumonia	6
Indigestion, acute	3	Wounds, gunshot	5
Influenza	5	Unknown	1

As stated in the Secretary's report, the above table is far from complete, but is given with the hope that its value will be recognized, and that it might act as a stimulus to those who, not seeing it, would otherwise remain indifferent.

STATISTICS

OF

Jail Reports for 1907.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Aiken, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												
	January.	February	March.	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.
Number	16	17	23	21	15	23	20	19	16	14	5	...	...
White	5	5	5	2	3	1	5	4	9	7	1	...	...
Colored	11	12	18	20	12	20	15	15	8	7	5	...	...
Male	15	17	22	16	12	20	19	15	16	12	3	...	...
Female	1	...	1	4	3	4	1	4	...	2	2	...	...
Offenses:													
Murder	2	...	2	1	1	2	4	1	1	2	2	...	...
Assault and Battery	3	3	2	1	3	3	4	3	5	1	1	...	...
Violation of Contract . . . . .	...	1	2	3	1	1	...	1	...	...	...	...	...
Obtaining Money Falsely . . . . .	...	...	...	...	1	...	...	2	1	...	...	...	...
Disposing of Crop . . . . .	...	...	...	...	1	...	...	...	...	...	...	...	...
Larceny	6	...	2	...	1	...	5	1	3	1	2	...	...
Housebreaking and Larceny	2	1	...	1	...	2	2	2	...	...	1	...	...
Arson . . . . .	...	...	...	1	2	...	...	...	...	...	...	...	...
Accessory to Murder . . . . .	...	...	...	1	...	...	...	...	...	...	...	...	...
Witness . . . . .	...	1	...	...	...	5	...	...	...	...	...	...	...
Breach of the Peace . . . . .	...	...	...	...	1	1	...	...	1	1	...	...	...
Carrying Concealed W'p'ns . . . . .	...	3	1	...	...	...	...	...	...	...	...	...	...
Lunacy . . . . .	...	2	1	1	1	1	2	2	...	1	...	...	...
Misdemeanor	1	7	3	6	1	2	2	3	3	4	...	...	...
Vagrancy . . . . .	...	...	3	...	...	...	...	...	...	...	...	...	...
Delinquent Tax . . . . .	...	...	...	1	...	...	...	...	...	1	...	...	...
Violation Dispensary Law . . . . .	...	1	1	1	...	2	1	...	...	...	...	...	...
Attempt to Rape . . . . .	...	...	...	1	1	...	...	1	1	...	...	...	...
Rocking Train . . . . .	...	...	...	2	...	...	...	...	...	...	...	...	...
Grand Larceny . . . . .	...	...	3	2	1	2	...	3	...	...	...	...	...
Breach of Trust . . . . .	...	...	...	...	1	...	...	...	...	...	...	...	...
Trespassing . . . . .	...	...	...	...	1	2	...	...	...	...	...	...	...
Disorderly Conduct	1	...	1	...	...	...	...	...	1	...	...	...	...
Abduction . . . . .	...	...	...	...	...	...	...	...	...	1	...	...	...
Highway Robbery	1	...	...	...	...	...	...	...	...	...	...	...	...
Violation Sec. 171, Code . . . . .	...	...	1	...	...	...	...	...	...	...	...	...	...

One case of tuberculosis.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Beaufort, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total
Number.....	8	4	5	7	..	8	4	6	16	..	..	..	..
White.....	2	3	5	7	..	3	2	6	16	..	..	..	..
Colored.....	8	3	5	6	..	5	3	5	14	..	..	..	..
Male.....	8	3	5	6	..	5	3	5	14	..	..	..	..
Female.....	..	1	..	1	..	3	1	1	2	..	..	..	..
Offenses:													
Murder.....	..	1	..	1	..	2	1	1	2	..	..	..	..
Assault and Battery.....	..	..	1	1	..	..	..	1	1	..	..	..	..
Obtaining Money Falsely.....	..	..	..	..	..	1	1	1	1	..	..	..	..
Larceny.....	1	1	..	3	..	1	1	1	4	..	..	..	..
Housebreaking and Larceny.....	..	..	2	1	..	..	..	..	2	..	..	..	..
Grand Larceny.....	..	..	..	1	..	..	..	..	..	..	..	..	..
Breach of the Peace.....	5	1	1	..	..	..	..	..	..	..	..	..	..
Carrying Concealed W'p'ns.....	..	..	..	..	..	..	2	1	..	..	..	..	..
Lunacy.....	1	..	..	..	..	..	..	1	..	..	..	..	..
Tampering with U. S. Mail.....	..	..	..	..	..	1	..	..	..	..	..	..	..
Slander.....	..	..	..	..	..	1	..	..	1	..	..	..	..
Violation Dispensary Law.....	..	..	..	..	..	1	..	..	1	..	..	..	..
Sick from Gang.....	..	1	1	..	..	1	1	..	..	..	..	..	..
Violation Sec. 3242.....	1	..	..	..	..	2	..	1	..	..	..	..	..
Violation Sec. 337.....	..	..	1	..	..	..	..	..	6	..	..	..	..
Contempt of Court.....	..	..	..	..	..	..	..	..	..	..	..	..	..

Sick, 3.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Edgefield, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	M nths.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number.....	20	8	4	9	4	10	11	22	4	6	7	...	...
White.....	1	2	...	2	...	1	4	1	...	1	...	...	...
Colored.....	19	6	4	7	4	9	7	21	4	5	7	...	...
Male.....	18	8	3	9	4	10	11	20	4	4	6	...	...
Female.....	2	...	1	...	...	...	...	1	...	2	1	...	...
Offenses:													
Murder.....	3	1	...	...	...	1	3	3	1	...	1	...	...
Assault and Battery...	1	1	...	1	...	2	...	3	...	2	1	...	...
Violation of Contract...	3	...	1	1	1	...	...	...	...	...	...	...	...
Obtaining Money Falsely..	1	...	...	...	1	2	...	...	1	...	...	...	...
Disposing of Crop.....	5	...	...	...	1	...	...	...	...	...	...	...	...
Larceny.....	3	1	...	2	2	1	1	2	1	2	...	...	...
Housebreaking and Larceny	...	...	...	1	...	1	1	2	...	...	2	...	...
Arson.....	...	1	1	...	...	1	...	...	...	1	...	...	...
Adultery.....	...	...	...	...	...	...	...	...	...	1	...	...	...
Witness.....	...	...	...	...	...	...	...	1	...	...	...	...	...
Breach of the Peace....	1	1	2	...	...	1	2	2	...	...	...	...	...
Kidnapping.....	...	...	...	...	...	...	3	...	...	...	2	...	...
Forgery.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Convict.....	...	...	...	...	...	1	1	5	...	...	1	...	...
Suspect.....	...	...	...	...	...	...	...	...	1	...	...	...	...
Violation Dispensary Law.	...	1	...	...	...	1	...	2	...	...	...	...	...
Attempt to Rape.....	...	...	...	1	...	...	...	1	...	...	...	...	...
Bigamy.....	1	...	...	...	...	...	...	...	...	...	...	...	...
Enticing Labor.....	2	...	...	2	...	...	...	...	...	...	...	...	...
Delirium Tremens.....	...	1	...	...	...	...	...	...	...	...	...	...	...
Cruelty to Animals.....	...	1	...	...	...	...	...	1	...	...	...	...	...
Accessory to Murder....	...	...	...	1	...	...	...	...	...	...	...	...	...

One sick.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Laurens, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number	4	3	13	11	7	...	16	17	5	11	...	...	...
White . . . . .	...	...	2	2	2	...	1	1	...	4	...	...	...
Colored	4	3	11	9	5	...	15	16	5	7	...	...	...
Male	4	2	13	11	7	...	16	15	5	11	...	...	...
Female . . . . .	...	1	...	...	...	...	...	2	...	...	...	...	...
Offenses:													
Murder	2	...	3	...	...	...	2	2	2	2	...	...	...
Assault and Battery . . . . .	...	...	1	...	1	...	1	4	...	3	...	...	...
Violation of Contract . . . . .	...	3	5	2	...	...	...	...	...	...	...	...	...
Obtaining Money Falsely . . . . .	...	...	1	1	...	...	...	...	...	1	...	...	...
Disposing of Crop . . . . .	...	...	...	1	...	...	...	...	...	...	...	...	...
Larceny	1	...	1	3	...	...	...	1	1	...	...	...	...
Housebreaking and Larceny . . . . .	...	...	1	...	1	...	1	2	...	1	...	...	...
Arson	1	...	...	...	...	...	...	...	...	...	...	...	...
Bigamy . . . . .	...	...	...	...	...	...	...	1	...	...	...	...	...
Failure to Support . . . . .	...	...	...	...	1	...	1	...	...	...	...	...	...
Wife Beating . . . . .	...	...	...	...	...	...	...	...	1	...	...	...	...
Carrying Concealed Wp'ns . . . . .	...	...	1	3	1	...	3	...	...	...	...	...	...
Misdemeanor . . . . .	...	...	...	...	...	...	...	...	...	1	...	...	...
Gambling . . . . .	...	...	...	...	...	...	7	4	...	...	...	...	...
Escaped Convict . . . . .	...	...	...	...	...	...	...	1	1	...	...	...	...
Sick from Gang . . . . .	...	...	...	...	1	...	...	...	...	...	...	...	...
Attempt to Rape . . . . .	...	...	...	...	...	...	...	1	...	...	...	...	...
Accessory to Murder . . . . .	...	...	...	1	...	...	...	...	...	...	...	...	...
Violation Dispensary Law . . . . .	...	...	...	...	2	...	1	...	...	...	...	...	...
Aiding Escape Prisoner . . . . .	...	...	...	...	...	...	...	1	...	...	...	...	...
Killing a horse . . . . .	...	...	...	...	...	...	...	...	...	1	...	...	...
Drunk and Disorderly . . . . .	...	...	...	...	...	...	...	...	...	2	...	...	...

Sick, 2.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Darlington, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	7	7	10	9	5	9	11	10	11				
White ..	1	1					3						
Colored..	6	6	10	9	5	9	8	10	11				
Male..	5	6	9	9	5	9	10	9	10				
Female..	1	1	1				1	1	1				
Offenses:													
Murder..		1		1			1						
Assault and Battery..			2		1	1	1	1	4				
Violation of Contract..			1	2									
Obtaining Money Falsely..		1	1				2	1					
Bigamy..							1	1					
Larceny..	3		3			6	1	2					
Housebreaking and Larceny				2	2		1		3				
Grand Larceny..					1								
Bastardy..						1							
Seduction..				1									
Breach of the Peace..	1	1				1		1	1				
Carrying Concealed W'p'ns				1									
Lunacy..	1	1					1	1					
Cruelty to Animals..							1	1					
Highway Robbery..		1											
Delinquent Tax..									1				
Misdemeanor..		2			1			2					
Rape..									1				
Violation Dispensary Law.	2	1	1	1			1						
Escaped Convicts..			2										
Receiving Stolen Goods..				1									
Violation Sec. 5457, R. S.													
U. S. ..							1						
Disposing of Crop under													
Lien..									1				

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Chester, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	M nths.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	11	5	17	8	7	9	9	13	13	11	...	...	...
White...	33	1	2	3	3	3	3	3	2	2	...	...	...
Colored..	11	32	16	6	4	6	6	10	11	9	...	...	...
Male...	10	5	16	8	7	9	7	12	11	10	...	...	...
Female...	1	...	1	...	...	...	2	1	2	...	...	...	...
Offenses:													
Murder...	1	1	...	1	...	1	...	1	1	...	...	...	...
Assault and Battery...	3	1	2	4	...	1	1	1	1	4	...	...	...
Obtaining Money Falsely...	...	...	...	...	...	...	...	...	1	1	...	...	...
Forgery...	...	...	...	...	...	1	...	...	...	...	...	...	...
Larceny...	3	...	5	...	...	1	1	6	4	3	...	...	...
Housebreaking and Larceny	...	...	...	...	1	...	...	1	...	...	...	...	...
Vagrant...	...	...	...	...	...	...	...	...	1	...	...	...	...
Arson...	...	...	...	...	...	1	...	...	...	...	...	...	...
Embezzlement...	...	...	...	...	1	...	...	...	...	...	...	...	...
Breach of the Peace...	...	...	...	...	...	...	1	...	...	...	...	...	...
Poisoning Child...	...	...	...	...	...	...	1	...	...	...	...	...	...
Carrying Concealed W'p'ns	...	...	...	...	1	...	...	...	1	1	...	...	...
Lunacy...	...	...	...	...	1	1	...	1	...	...	...	...	...
Soliciting Labor...	...	...	...	...	...	1	...	...	...	...	...	...	...
Convict...	1	...	8	...	1	...	...	...	...	1	...	...	...
Adultery...	...	...	...	...	...	...	...	1	...	...	...	...	...
Misdemeanor...	1	3	2	1	2	1	4	1	3	...	...	...	...
Attempt to Rape	...	...	...	1	...	1	...	1	...	...	...	...	...
Disturb'g Relig's Services..	1	...	...	...	...	...	...	...	1	...	...	...	...
Violation Dispensary Law.	1	...	...	...	...	...	...	...	...	1	...	...	...
Wanted in Columbia...	...	...	...	1	...	...	...	...	...	...	...	...	...
Felony ..	...	...	...	...	...	...	1	...	...	...	...	...	...

Sick, 6.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of
Dorchester, S. C., for the year 1907, giving number, color, sex,
offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	5	2	...	4	1	2	3	3	2	8	6	...	...
White..	5	2	...	4	1	1	1	3	2	8	6	...	...
Colored..	5	2	...	4	1	1	2	3	2	8	6	...	...
Male..	5	2	...	4	1	1	2	3	2	8	6	...	...
Female..	...	...	...	...	...	1	...	...	...	...	...	...	...
Offenses:													
Murder..	1	1	...	1	1	...	...	1	...	2	...	...	...
Assault and Battery..	...	...	...	1	...	...	1	...	...	...	...	...	...
Obt'n'g Money False P't'se	...	...	...	...	...	...	...	1	1	...	...	...	...
Disposing of Crop..	...	...	...	...	...	...	...	...	...	1	3	...	...
Larceny..	1	...	...	2	...	...	...	1	1	...	1	...	...
Housebreak'g and Larceny	2	...	...	...	...	...	...	...	...	1	1	...	...
Breach of Peace..	...	1	...	...	...	...	1	...	...	...	...	...	...
Lunacy..	...	...	...	...	...	1	1	...	...	1	...	...	...
Trespassing..	...	...	...	...	...	...	...	...	...	...	1	...	...
Delinquency Tax..	...	...	...	...	...	1	...	...	...	...	...	...	...
Misdeamor ..	1	...	...	...	...	...	...	...	...	...	...	...	...

Sick, 1.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of
Berkeley, S. C., for the year 1907, giving number, color, sex,
offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	6	1	5	1	5	4	11	4	6	6	9	...	...
White..	6	1	5	1	5	4	8	4	1	2	4	...	...
Colored..	6	1	5	1	5	4	8	4	5	4	5	...	...
Male..	5	1	5	1	5	4	8	4	5	4	5	...	...
Female..	1	...	...	...	...	...	3	...	...	...	...	...	...
Murder..	...	...	...	...	...	1	...	...	3	1	...	...	...
Assault and Battery..	2	1	...	...	4	1	3	...	1	2	...	...	...
Violation of Contract..	...	...	...	...	...	...	...	...	1	...	...	...	...
Obtaining Money Falsely..	...	...	1	...	...	...	1	1	...	...	...	...	...
Larceny..	3	...	1	...	...	...	...	1	1	...	...	...	...
Housebreaking and Larceny	...	...	...	1	...	...	...	...	...	...	4	...	...
Arson..	...	...	3	...	...	...	...	...	...	...	...	...	...
Breach of the Peace..	...	...	...	...	1	1	...	...	...	2	1	...	...
Lunacy..	1	...	...	...	...	...	1	1	...	1	...	...	...
Gambling..	...	...	...	...	...	...	3	...	...	...	...	...	...
Brutality..	...	...	...	...	...	...	...	1	...	...	...	...	...
Delinquent Tax..	...	...	...	...	...	...	1	...	...	...	...	...	...
Keeping House Ill Fame..	...	...	...	...	...	...	2	...	...	...	...	...	...
Violation Dispensary Law.	...	...	...	...	...	1	...	...	...	...	...	...	...

No sickness.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Williamsburg, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	4	4	...	5	4	3	2	1	...	...	4	...	...
White..	1	1	...	1	1	1	1	1	...	...	1	...	...
Colored..	4	4	...	5	3	3	2	1	...	...	3	...	...
Male..	4	4	...	5	4	3	2	1	...	...	4	...	...
Female..	...	...	...	...	...	...	...	...	...	...	...	...	...
Offenses:													
Murder..	...	...	...	...	1	1	2	...	...	...	3	...	...
Assault and Battery..	...	3	...	2	...	...	...	...	...	...	...	...	...
Violation of Contract..	...	...	...	1	...	...	...	...	...	...	...	...	...
Disposing of Crop Under Lien..	1	...	...	...	1	...	...	1	...	...	...	...	...
Larceny..	1	...	...	...	...	...	...	...	...	...	1	...	...
Grand Larceny..	...	...	...	2	...	1	...	...	...	...	...	...	...
Witness..	1	...	...	...	...	...	...	...	...	...	...	...	...
Breach of the Peace..	...	...	...	...	1	...	...	...	...	...	...	...	...
Carrying Concealed W'p'ns	...	1	...	...	...	...	...	...	...	...	...	...	...
Lunacy..	...	...	...	...	...	1	...	...	...	...	...	...	...
Disturbing Religious Services..	...	...	...	...	1	...	...	...	...	...	...	...	...
Emigration Act..	1	...	...	...	...	...	...	...	...	...	...	...	...

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Lancaster, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	8	8	15	3	8	8	5	9	8	18	9	...	...
White..	1	1	2	...	...	...	...	1	1	7	...	...	...
Colored..	7	7	13	3	8	8	5	8	7	11	9	...	...
Male..	8	8	15	3	8	8	5	9	8	18	9	...	...
Female..	...	...	...	1	...	...	...	...	...	...	...	...	...
Offenses:													
Murder..	...	1	2	...	1	...	...	...	...	2	...	...	...
Assault and Battery..	1	1	5	...	...	2	...	4	...	4	1	...	...
Violation Contract..	1	1	3	...	...	...	...	...	...	...	...	...	...
Obtaining Money Falsely..	...	...	...	2	...	...	1	...	...	1	1	...	...
Disposing Crop..	...	1	...	...	...	...	...	...	...	1	1	...	...
Grand Larceny..	...	2	...	...	...	...	...	2	...	1	3	...	...
Larceny..	3	...	1	...	1	3	1	...	...	1	1	...	...
Housebreaking & Larceny	1	...	2	...	2	...	1	...	1	1	...	...	...
Arson..	...	...	...	...	1	...	...	...	...	...	...	...	...
Dist'bing Relig's S'vices.	...	...	...	...	...	...	...	1	1	...	...	...	...
Bigamy..	...	...	...	...	...	...	...	...	...	...	...	...	...
Breach of Peace..	...	...	...	...	...	3	1	1	1	2	...	...	...
Carrying Cn'ld Weapons.	...	...	...	...	...	...	...	1	1	1	1	...	...
Lunacy..	1	1	...	1	...	...	...	...	...	...	...	...	...
Trespassing..	...	...	...	...	...	...	...	1	...	...	...	...	...
Disorderly Conduct..	...	...	...	...	1	...	1	...	2	1	...	...	...
Abduction..	...	...	...	...	2	...	...	...	...	1	...	...	...
Violation Dispensary Law.	...	1	2	...	...	...	...	...	...	1	...	...	...
Hiring Labor Unlawfully.	...	...	...	...	...	...	...	1	...	...	...	...	...
Pass'ng Counterfeit Money.	1	...	...	...	...	...	...	...	...	...	...	...	...
Perjury..	...	...	...	...	...	...	...	...	...	1	...	...	...
Cruelty to Animals..	...	...	...	...	...	...	...	...	...	...	1	...	...

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Greenwood, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	14	12	9	4	6	3	6	7	0	4	...	...	...
White..	2	2	4	1	...	...	2	...	...	1	...	...	...
Colored..	12	10	5	3	6	3	4	7	...	3	...	...	...
Male..	13	11	8	3	5	3	6	6	...	4	...	...	...
Female..	1	1	1	1	1	...	...	1	...	...	...	...	...
Offenses:													
Murder..	5	...	1	...	1	1	1	...	...	...	...	...	...
Assault and Battery..	1	...	1	1	...	1	...	...	...	...	...	...	...
Violation Contract..	...	...	...	1	...	1	...	...	...	1	...	...	...
Abduction..	...	...	...	...	...	...	...	...	...	1	...	...	...
Obtaining Money Falsely..	...	1	...	...	...	...	...	...	...	...	...	...	...
Disposing of Crop..	...	1	2	...	...	...	2	...	...	...	...	...	...
Larceny..	...	...	1	...	...	...	2	2	...	...	...	...	...
Grand Larceny..	...	1	...	...	...	...	...	...	...	...	...	...	...
Housebreaking & Larceny..	...	...	...	...	...	...	...	4	...	...	...	...	...
Gambling..	...	...	...	...	...	...	...	...	...	1	...	...	...
Arson..	1	...	2	...	...	...	...	...	...	...	...	...	...
Surrender Bond..	...	3	...	...	...	...	...	...	...	...	...	...	...
Bastardy..	...	...	...	...	...	...	1	...	...	...	...	...	...
Breach of the Peace..	5	...	...	...	...	...	...	...	...	...	...	...	...
Carrying Cn'd Weapons..	...	...	...	...	...	1	...	...	...	...	...	...	...
Lunacy..	...	2	...	2	...	...	...	...	...	...	...	...	...
Fornication..	...	...	...	...	2	...	...	...	...	...	...	...	...
Drunk and Disorderly..	...	3	...	...	...	...	...	...	...	...	...	...	...
Delinquent Tax..	...	...	...	...	1	...	...	...	...	...	...	...	...
Convict..	1	...	1	...	...	...	...	...	...	...	...	...	...
Attempt to Rape..	...	...	...	...	...	...	...	1	...	...	...	...	...
Forgery..	1	...	...	...	...	...	...	...	...	...	...	...	...
Misdemeanor..	...	1	...	...	2	...	...	...	...	...	...	...	...
Violation Disp. Ordinance..	...	...	1	...	...	...	...	...	...	1	...	...	...

Note—In January report many of the offenses, particularly the murders, are prisoners serving sentences that date as far back as November 15, 1906.

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Union, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

[illegible]

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Pickens, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

[illegible]

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of York, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number.. . . .	9	3	6	15	5	5	4	9	6	2	...	...	...
White.. . . .	9	3	2	4	1	3	2	1	1	1	...	...	...
Colored.. . . .	9	3	4	11	4	2	2	8	5	1	...	...	...
Male.. . . .	6	2	4	14	4	5	3	7	6	2	...	...	...
Female.. . . .	3	1	2	1	1	...	1	2	...	...	...	...	...
Offenses:													
Murder.. . . .	1	1	1	1	2	...	...	...	...	...	...	...	...
Assault and Battery.. . . .	...	...	...	2	...	1	1	1	1	...	...	...	...
Violation Contract.. . . .	1	...	...	...	...	...	...	...	...	...	...	...	...
Obtaining Money Falsely.. . . .	1	...	...	...	...	...	...	...	...	...	...	...	...
Larceny.. . . .	...	...	1	2	1	...	2	2	1	...	...	...	...
Grand Larceny.. . . .	...	...	...	...	...	...	...	...	1	1	...	...	...
Housebreaking & Larceny.. . . .	3	...	1	...	1	...	...	...	...	...	...	...	...
Arson.. . . .	1	1	1	...	...	...	...	...	...	...	...	...	...
Gambling.. . . .	...	...	...	4	...	...	...	1	...	...	...	...	...
Witness.. . . .	1	1	...	...	...	...	...	...	...	...	...	...	...
Breach of the Peace.. . . .	...	...	...	...	...	3	...	...	...	...	...	...	...
Carrying Con'ld Weapons.. . . .	...	...	1	...	...	...	...	2	...	...	...	...	...
Lunacy.. . . .	...	...	...	1	1	...	1	1	2	...	...	...	...
Disorderly Conduct.. . . .	...	...	1	...	...	...	...	...	...	...	...	...	...
Vagrancy.. . . .	...	...	...	1	...	...	...	...	...	...	...	...	...
Adultery.. . . .	...	...	...	...	...	...	...	1	...	...	...	...	...
Fugitive From Justice.. . . .	1	...	...	...	...	...	...	...	...	...	...	...	...
Attempt to Rape.. . . .	...	...	...	2	...	...	...	...	1	...	...	...	...
Violation Disp. Ordinance.. . . .	...	...	...	...	...	...	...	...	...	1	...	...	...
Perjury.. . . .	...	...	...	2	...	1	...	...	...	...	...	...	...
Forgery.. . . .	...	...	...	...	...	...	...	1	...	...	...	...	...
Sick.. . . .	...	...	4	...	...	...	...	...	...	...	...	...	...

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Marion, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..	8	5	5	8	12	15	9	13	9	3	4		
White..	8	4	1	8	12	5	1	12	5	1	4		
Colored..		1				10		1	4				
Male..	8	5	5	8	12	10	8	13	9	3	4		
Female..						1	1						
Offenses:													
Murder..											1		
Assault and Battery..	2	1			3	1		2		1	2		
Larceny..	2	1	3	2	5	8	3	8	3	1	1		
Housebreaking & Larceny	3												
Buggery..						1							
Trespassing..					1								
Breach of Peace..							1						
Car'ng Conc'd Weapons	1												
Lunacy..				1	1	1	1						
Forgery..									2				
Arson..								1	1				
Criminal Carelessness..													
Attempted Rape..				1	1	1		1		1			
Disorderly Conduct..							2		1				
Disposing of Property..		1							1				
Induc. Labor Under Cont.		1											
Highway Robbery..		1											
Violat. Dispen. Ordinance			2	1		3	2	1	1				
Resisting Arrest..				1									
Wrecking Train..				1									
Kidnapping..				1									
Neglect of Family..					1								

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Newberry, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Number..		1				2			1	3	14	1	
White..											1		
Colored..		1				2			1	3	13	1	
Male..		1				2			1	3	13	1	
Female..											1		
Offenses:													
Murder..						2				1	2		
Assault and Battery..											4		
Larceny..										1	2		
Arson..		1									3	1	
Witness..									1		1		
Violation Disp. Law..									1	1	2		

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Clarendon, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

	Months.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Number..	11	..	..	2	2	3	11	..
White..	2	3	..	..
Colored..	11	..	..	2	2	3	11	..
Male..	11	..	..	2	2	3	10	..
Female..	1	..
Offenses:												
Murder..	1	..	..
Violation Contract..	1	..	..	..	..	..	..	..
Grand Larceny..	1	1	..
Larceny..	2	..	..	1	3	1	2	..
Housebreaking & Larceny..	6	..	..	..	..	..	1	..
False Pretense..	6	..
Disposing of Crop..	1	1	..	..	..
Forgery..	2	..	..	..	2	..	..	..
Rape..	2	..	..	..

YEARLY JAIL REPORT.

Below are statistics relating to prisoners in the Jail of the County of Lexington, S. C., for the year 1907, giving number, color, sex, offenses, sickness, deaths.

Cause of Death.	Months.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Number..	4	1
Colored..	4	1
Male..	4	1
Offenses:												
Murder..	1	..
Assault and Battery..	1	..
Housebreaking & Larceny..	1	..
Breach of the Peace..	1	..

Four cases of sickness.

List of Exchanges.

Illinois Medical College, Chicago, Willard C. Sanford, M. D., Columbus Mem. Bldg.
 Moss Institute of Technology, Boston, R. P. Bigelow.
 Ohio State Library, Columbus, Miss Mary VanZandt.
 Casa de Orates, Santiago de Chile, Pedro Moult.
 Ira W. Porter, 316-317 Sheely Block, Omaha, Neb.
 Western Society of Engineers, Chicago, Ill.
 K. L. Sharp, University of Illinois, Urbana.
 State Board of Health of Pennsylvania.
 State Board of Health of Connecticut.
 State Board of Health of New Hampshire.
 State Board of Health of Kansas.
 Board of Health, Province of Quebec.
 State Board of Health of Illinois.
 State Board of Health of New York.
 State Board of Health of New Jersey.
 State Board of Health of Washington, D. C., Newman, Spokane.
 State Board of Health of California.
 State Board of Health of Indiana.
 State Board of Health of Massachusetts.
 State Board of Health of West Virginia.
 State Board of Health of Wisconsin.
 Board of Health of Province of Ontario.
 Board of Health of District of Columbia.
 Board of Health of Mexico, Mexico.
 Board of Health of Santiago de Cuba.
 United States Department of Agriculture.
 Board of Trustees of New York City.
 Health Commissioners of St. Louis.
 Karsirlichen Gesund Leitsamte, Berlin.
 Board of Health of New York City.
 Board of Health of Chicago.
 Board of Health of Denver, Colorado.
 Consejo Superior de Salubridad de Mexico.
 Janns, Berlin.
 Gonsejo Salubridad de Mexico, Momero Especial.
 State Board of Health of Maine.
 State Board of Health of Rhode Island.
 State Board of Health of Delaware.
 State Board of Health of Ohio.
 New York Academy of Medicine, John S. Brown.
 State Board of Health of Virginia.
 Amherst College Library, Amherst, Mass., W. I. Fletcher.
 H. C. Nash, Leland Stanford, Jr., University, Palo Alto, Cal.
 Ohio State University, Columbus.
 Worthington C. Ford, American Statistical Association, Boston.
 University of Kansas, Lawrence.
 W. H. Allen, University of Pennsylvania.
 Dr. I. Dyer, Orleans Parish Medical Society, 163 University Place.
 J. E. Cowgill, 536-537 Luckke Building, Indianapolis, Ind.
 H. H. Courtwright, Great National Building, Chicago, Illinois.
 F. F. Westbrook, Minneapolis, Minnesota.
 Iowa State Library, Des Moines, Iowa.
 John Crerar, Library, 6th floor Marshall & Field Co. Building, Chicago, Illinois.
 Manhattan Life Insurance Company, 66 Broadway, New York.

L. G. Finley, M. D., McGill University, Montreal, Canada.
 Library of British Museum, London, England.
 James Thayer Geronld, University of Missouri, Columbia, Missouri.
 Marine Hospital Service, Honolulu, H. I., G. E. Cafer.
 J. M. Williams, President Board of Health of San Francisco.
 Iowa State University, Iowa City, Bertha G. Ridgeway.
 Dr. P. D. Von Enke, Department Agriculture, Washington, D. C.
 Medical Record, No. 51 Fifth Avenue, New York.
 Joseph Y. Porter, State Health Office, Jacksonville, Fla.
 Dietetic Hygienic Gazette, 503 Fifth Avenue, New York.
 W. F. Morrow, State Board Health, Kansas City, Mo.
 Journal of Tuberculosis, Asheville, N. C.
 Miss Lillian Branelt, Prevention of Tuberculosis, New York.

List of Local Boards of Health.

ABBEVILLE COUNTY.

Abbeville.—None.

Coronaca.—Dr. J. P. Morrow, President; Dr. J. D. Dansten, J. S. Klugh, J. W. Ligon, J. D. Fooshe, Secretary.

McCormick.—Dr. J. P. Robinson, President; J. H. Sanders, H. Baughman, James Cortman, Jr., B. I. Burdshaw.

Troy.—L. N. Kennedy, M. D., President; C. L. Kennedy, J. B. Owen, W. T. Bradley, J. F. Wildeman, L. M. Dendy.

Wagener.—Dr. L. B. Etheridge, G. E. Gantt, J. W. Baughman, Secretary.

AIKEN COUNTY.

Aiken.—Secretary, R. L. Gunter.

Ellenton.—W. H. Jones, President; B. T. Foreman, James R. Dunbar, Dr. A. W. Balley, R. J. Dunbar.

Hamburg.—Dr. W. E. Mealing, President; J. H. Gitzen, W. E. Lykes, B. M. Youngblood, J. E. Hammond.

Salley.—Thomas Stansell, E. A. Glover, A. F. Dicks, Dr. J. A. Milhouse, Dr. H. J. Salley.

ANDERSON COUNTY.

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Pendleton.—Dr. Duvant, Dr. W. W. Watkins, H. P. Sitton, J. I. Hunter, Secretary; Darwin Reid, President.

Belton.—Dr. W. R. Hanle, D. A. Geer, J. E. Horton, E. B. Rice, G. W. McGee, J. A. Horton, Intendant.

Anderson.—Dr. White, Chairman; Dr. Dickert, General Bonham, M. Russell, J. B. Townsend, Secretary.

BARNWELL COUNTY.

Blackville.—J. V. Baxley, Chairman; R. A. Gyles, G. D. C. Lange, H. D. Still, B. J. Hammett.

Bamberg.—J. B. Black, M. D., President; H. C. Folk, J. D. Felder.

Barnwell.—Dr. L. E. Patterson, President; Col. J. J. Brown, W. W. Moore, J. S. Shack.

Elko.—Ashley Stansell, J. H. Hair, W. B. Johnston, L. A. Thompson, Dr. W. L. Smith, Secretary.

Midway.—Dr. J. F. Bagath, President; S. C. Williams, C. C. Ellzey, L. M. Fender, A. R. Ramsey.

Williston.—W. C. Smith, President; J. C. Hairheath, L. S. Mellichamp, Secretary; W. T. Wills, J. A. Roundtree.

Govan.—J. R. McCormick, Secretary.

Steglingville.—O. W. Barker, Secretary.

BERKELEY COUNTY.

Maryville.—J. E. Ancrum, Isaac Nelson, P. Graham, S. W. Barnwell.

Eutawville.—Gen. C. St. G. Sinkler, President; Dr. W. Taylor Edmunds, Secretary; Rev. J. W. Motte, S. A. Fadon, T. R. Seeley.

Summerville.—J. B. Gadsden, A. W. Taylor, H. M. Manigault, N. A. Hunt, Dr. F. J. Carroll, George Tupper, Secretary.

- St. Stephens.*—Dr. M. A. Floyd, Secretary; Dr. L. A. Douglass, G. T. Parris, D. M. Larrenz, F. N. Shipman, J. F. Welch.
Mt. Pleasant.—C. McKinley, President; R. V. Royall, Secretary; James Hampton, G. von Kolnitz, W. J. Edmonston.

BEAUFORT COUNTY.

- Port Royal.*—H. R. Walker, Chairman; John Stickley, W. A. Smith, Dr. M. B. Cope, Secretary.
Beaufort.—J. S. Kennedy, Secretary.

CHARLESTON COUNTY.

- Moultrieville.*—J. H. T. Konig, President; D. Kernan, Charles A. Brown, Henry Behrman, Dr. R. S. Kirk.

CHEROKEE COUNTY.

- Gaffney.*—W. T. Thompson, Secretary.

CHESTER COUNTY.

- Fort Lawn.*—W. H. Thomasson, G. W. McKown, Secretary.
Hazlewood.—Dr. B. E. Kele Banks, J. P. Ragsdale, Andrew Pedau.
Blackstock Township.—Cornwell H. McCown, T. J. Cunningham.
Landsford.—Dr. W. B. Cox, Secretary; I. D. Collins, Hugh Hindman.
Chester.—Dr. Harvey E. McConnell, Chairman; M. Carpenter, J. J. McNinch, Col. N. P. Johnson, Secretary; J. S. Colvin, Chairman.
Baton Rouge.—Dr. I. M. McCollum, Secretary; H. C. Worthy, J. H. Love.
Halsellville.—Dr. I. S. Wise, I. B. Stokes, W. A. Carswell.
Blackstock.—J. E. Craig, W. D. Douglass, D. A. Deitz, J. W. Cornwell.
Lewisville.—Dr. R. L. Douglass, Secretary; J. P. Gaston, R. L. Strand.
Richburg.—R. F. Crockett, G. C. Dill, D. G. Lewis, V. B. Millen, Dr. C. L. Clawson, Secretary.
Rossville.—Dr. C. B. McCown, D. Gober Anderson, W. B. Ferguson; J. S. Wise, Secretary.

CLARENDON COUNTY.

- Foreston.*—Dr. J. A. Briggs, R. Adman.
Summerton.—Rev. B. Smith, W. R. Mood, Dr. L. C. Stokes, Secretary.
Alcolu.—Dr. T. J. Davis; E. Capers, Secretary.
Manning.—Dr. C. B. Gelger, President; B. P. Thames, Secretary.
Pinewood.—Dr. P. M. Salley, Chairman; R. F. Epperson, Secretary; Dr. D. N. Murray, H. F. Stack, A. W. Griffin, P. H. Broughton.

CHESTERFIELD COUNTY.

- Has none.

COLLETON COUNTY.

- Walterboro.*—C. C. Tracy, Secretary; T. J. Blanchard, A. C. Schaffer, J. S. McTier, C. G. Henderson, Dr. H. W. Black, James S. Clocher, Dr. E. H. Williams.
Jacksonboro.—Dr. H. E. Bissell, C. W. Butler; W. B. Sanders, Secretary; J. H. Rodgers, T. W. Linder.
Grover.—Dr. W. M. Shuler, President; J. N. Westbury, Secretary.

DORCHESTER COUNTY.

- St. George.*—C. M. Gavin, Secretary.

DARLINGTON COUNTY.

Darlington.—Henry Sanders, Secretary; Dr. A. T. Balrd, Dr. W. S. Galloway, Robert Keith Dargan, Jesse Williams.
Hartsville.—J. L. Coker, Secretary; J. W. Davis, L. Vaughan, Dr. B. L. Norwood, President; H. L. Law.

EDGEFIELD COUNTY.

Ridge Spring.—Dr. D. B. Froulis, Secretary; Dr. F. G. Asbill.
Delmar.—Dr. P. W. Hite, A. L. Eargle, J. Ed. Shealy, Paul Shealy, O. Cannon.
Parksville.—Rev. G. W. Bussey, Hon. W. J. Talbert, J. H. Parks, J. E. Moultrie; Dr. W. G. Blackwell, Secretary.
Edgefield.—Dr. F. W. P. Butler, President; Dr. C. P. DeVan, G. G. Lewis.
Johnston.—Dr. D. P. LeGrone, Secretary.

FAIRFIELD COUNTY.

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Ridgeway.—T. L. Rosboro, Secretary; Dr. J. R. Desportes, Chairman; D. N. Ruff, J. S. Edmunds, C. L. Wray.

FLORENCE COUNTY.

Florence.—Dr. F. P. Covington, Chairman; Dr. William Ilderton; J. J. Brown, Secretary; C. D. Bristow, R. C. Commander; J. C. Brunson, Secretary.
Timmons ville.—J. B. Whitehead, J. Holland Call, E. B. Turner; Duncan McKenzie, Secretary; Dr. J. A. Cole, Chairman.

GEORGETOWN COUNTY.

Georgetown.—W. E. Sparkman, President; E. W. Kaminski, E. M. Lucas, A. J. Dunmore; J. Jenkins Hucks, Secretary; Thomas P. Fraser.

GREENVILLE COUNTY.

Greenville.—F. S. Rowley, Chairman; C. D. Stadley, Alex. Finlay, J. M. McGee, B. F. King, J. S. McGee, R. S. Morgan, Thomas L. Gilreath, W. B. Madden, F. M. Perry, A. H. Donaldson; C. A. Simpson, Secretary.
Travelers Rest.—B. R. Cox, President; J. D. Cooper, T. B. Cunningham, W. C. B. Pike, J. I. Coleman.
Piedmont.—Dr. C. T. C. Giles, Chairman; Dr. J. H. Donald; Dr. J. C. Mitchell, Secretary.

GREENWOOD COUNTY.

Greenwood.—J. R. Leavell, Secretary; J. B. Hughey, President; A. J. Bell, R. M. Hays, J. R. Leavell, Jr., J. S. Mars.

HAMPTON COUNTY.

Varnville.—Dr. J. W. Colson, Dr. C. P. Vincent.
Luray.—T. W. Smith, Secretary.
Lincolnvill.—Daniel Adger; R. W. Nesbitt, Secretary.

HORRY COUNTY.

Has none.

KERSHAW COUNTY.

Camden.—J. W. Corbett, M. D.

Kershaw.—J. E. W. Halle, M. D., President; J. M. Kirkley, T. J. Gregory, J. B. Witherspoon, John W. Truesdale; Dr. C. B. Horton, Secretary.

LANCASTER COUNTY.

Has none.

LAURENS COUNTY.

Princeton.—Dr. Casper West.

Laurens.—Col. T. B. Crews, President; H. E. Gray, Dr. J. P. Simpson, W. W. Jones; P. A. Simpson, Secretary.

Waterloo.—Dr. L. M. Henderson, T. B. Anderson, J. B. Wharton, B. A. Anderson.

Cross Hill.—Dr. T. E. McSwain, Secretary; Dr. J. H. Miller, Dr. M. E. Goddard, Dr. E. M. Pinson; J. P. Smith, President.

Mountville.—B. R. Austin, M. A. Leaman, Fay Larkin, J. M. Simmons; Dr. A. Fuller, Secretary.

Clinton.—E. C. Briggs, Secretary; B. L. Wright, Dr. S. L. Bailey, W. E. Owens, S. H. Davidson.

LEE COUNTY.

Bishopville.—R. E. Eames, W. L. Parrott, H. W. Parker, O. C. Scarborough, H. B. Newsome, Secretary.

LEXINGTON COUNTY.

Batesburg.—Dr. T. S. Fox, Chairman; Dr. L. M. Mitchell.

Lexington.—James E. Rawl, President; George F. Drafts, H. O.

Swansea.—Dr. J. L. Johnson, Secretary; Dr. J. R. Langford, Chairman; W. M. Johnson, C. H. Corbett, W. H. F. Rast.

Peak.—W. G. Dickert, Secretary; Dr. George Douglass, E. M. Stuck, W. H. Suber, B. F. Swetenberg.

Irmo.—Dr. J. E. Lee, Rev. G. W. Davis, Rev. H. E. Lewis, J. T. Warner, J. P. Sheely.

MARION COUNTY.

Latta.—Dr. F. M. Munroe, Secretary; G. W. Munn, G. C. Crawford.

Marion.—W. J. Montgomery, H. Mullins, J. W. Johnson; Dr. A. McIntyre, Secretary; E. T. Wilcox, President.

Dillon.—Dr. T. J. Weatherly, President; S. S. Rosler, C. W. Davis, Dr. J. P. Ewing, A. J. C. Cottingham; J. L. McEachern, Secretary.

MARLBORO COUNTY.

Blenheim.—W. J. Atkinson, Secretary.

Olio.—Dr. J. A. Woodley, Secretary; W. A. Henshaw, W. C. Smith, John W. Welch, S. L. Stanton.

Bennettsville.—Dr. W. J. Crosland, President; T. C. Weatherly, R. T. Barfield; T. W. Bolton, Secretary.

NEWBERRY COUNTY.

Newberry.—P. G. Ellison, Chairman; E. Cabaniss, Secretary.

Little Mountain.—Dr. John M. Sease.

Prosperity.—Dr. A. F. Langford, President; B. L. Darmick, J. B. Fellers, H. S. Boozer, Francis Bobb.

Township No. 2.—B. F. Cannon; Dr. G. B. Caldwell, Secretary.

Township No. 9.—Dr. J. J. Dominick, Secretary.

OCONEE COUNTY.

- Walhalla*.—R. F. Joynes, Secretary; S. N. Pitchford; Dr. D. B. Darby, President; B. R. Westmoreland, Dr. J. J. Bell.
Seneca.—Dr. J. B. Brown, President; B. F. Sloan, Secretary; Dr. G. L. Martin, M. W. Coleman, O. F. Bacon.
Clemson College.—Dr. Redfearn, Dr. P. H. E. Sloan, T. Q. Donaldson, W. L. McGee.
Westminster.—J. W. Quillian, M. D.; A. Zimmerman, Secretary; B. H. Cross.

ORANGEBURG COUNTY.

- Ellorec*.—A. L. Singletary.
Livingston.—Dr. Thomas J. Pou, Chairman; J. C. Wooley; J. W. Gantt, Secretary; A. E. Jernigan.
Norway.—Dr. R. R. Stephens; C. H. Able, Secretary.
North.—Dr. T. F. Williams, Secretary.
Orangetburg.—L. H. Wannamaker.
Fort Motte.—Dr. W. W. Wolfe, President; G. W. Killard, Thomas I. Hopkins, John D. Maynard; David Christie, Secretary.
Woodford.—Dr. J. M. Davis, S. W. Livingston, Joseph Wingard, I. R. Dissenganner, S. J. Dernow.
Vance.—E. I. Dantzler, Dr. W. H. Lawton, Dr. J. Avlinger, A. P. Avlinger, Jr., J. L. Banister.
Branchville.—J. Katresh, President; Dr. W. L. Reeves, Secretary; W. C. Crum, H. O.; W. P. Dukes, W. L. Dukes, W. L. Wolfe.
Rowesville.—Dr. A. O. Bowman, Chairman; W. L. Wolfe; W. P. Dukes, Secretary; M. F. Dukes.
St. Stephens.—Dr. A. R. Able, Secretary.

PICKENS COUNTY.

- Liberty*.—W. A. Sheldon, Secretary; Dr. J. J. Wakelin, W. H. Chapman, L. O. Skelton; F. N. Hunter, President.
Easley.—H. E. Russell, Chairman; W. A. Mauldin, B. C. Johnson, J. T. Lathem; Dr. C. W. Wyatt, Secretary.
Fort Hill.—Dr. A. E. Hines, W. L. Poore, E. T. Lovell.
Calhoun.—P. T. Dillard, Secretary.

RICHLAND COUNTY.

- Columbia*.—Dr. Robert W. Gibbes, Dr. W. K. Griffith, C. F. Hoefler, J. C. Robertson, F. VanBenthuyzen, Dr. A. E. Boozer, J. L. Casey, O. E. Thomas, Edward Ehrlich, John A. Jennings, Dr. L. B. Owens, H. J. Hennies, Alonzo Monckton, R. McDougall, J. G. Graham; T. T. Talley, Secretary.

SALUDA COUNTY.

- Mt. Willing*.—Dr. J. J. Buster.
Saluda.—J. J. Buster, Secretary; W. E. Black, T. B. Holly, T. E. Dowling, Chairman.

SPARTANBURG COUNTY.

- Cowpens*.—Dr. Charles Sims, W. H. Wheat, W. O. Turner, D. S. Lipscomb, E. Potter.
Enoree.—Dr. J. H. Allen, President; J. F. Matthews, R. L. Walker, F. Engels, E. B. Huff; Rev. J. M. Friday, Secretary.
Woodruff.—B. S. Beason, T. W. Cox, E. G. Floyd, Secretary; Dr. S. A. Wideman.
Spartanburg.—Henry Heintish, Secretary.
Landrum.—Dr. J. W. Campbell, R. A. Clinton.
Inman.—Dr. W. J. Wall, D. B. Canady, A. W. Ballenger, Dr. J. R. Gibson, Chairman; W. A. Hart, Secretary.

Reidville.—Dr. W. A. Harrison, E. R. Thackston.
Switzer.—Thomas W. Collier, Secretary; Martin Mitchell, W. G. Waldrop.
Rodman.—Dr. R. L. Douglass, Secretary.

SUMTER COUNTY.

Mayesville.—W. M. Bradley, Chairman; Dr. C. E. King, T. W. Bradley, M. V. Izlar, W. D. Mayes, W. J. McLeod, T. M. McCutchen, Secretary.
Sumter.—E. J. Reardon, Secretary; Dr. H. M. Stuckey, President; W. M. Graham, Dr. S. C. Baker, D. W. Cuttino, L. J. Spann.
Pinewood.—Dr. P. M. Tally, Intendant; R. F. Epperson, Secretary; Dr. D. M. Murray, H. F. Stack, A. W. Griffin, P. H. Broughton.

UNION COUNTY.

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Carlisle.—J. G. Rice, Secretary; M. R. Jeter, W. H. Gist, Dr. J. T. Hancock, M. O. Ward.
Jonesville.—Dr. W. O. Southard, Secretary; Dr. K. M. Littlejohn, Dr. H. L. Harris, F. P. O. Shields, J. F. Ahnon.
Kelton.—L. J. Wood, Secretary.

WILLIAMSBURG COUNTY.

Scranton.—W. J. Sturghion, Secretary; W. J. Willoughby, J. M. Kirby.
Lake City.—Dr. Thad B. Hinnant, John J. Morris, H. H. Singletary, John A. Green, John L. Stucky, Secretary.
Cades.—E. R. Wilson, M. D.

YORK COUNTY.

Blacksburg.—Dr. J. G. Black, President; W. M. Freeman, Dr. D. S. Ransom, Secretary; A. M. Bridges, W. M. Anderson, W. A. Barber.
Fort Mill.—Dr. T. B. Meacham, S. E. White, L. N. Culp, L. J. Massey, Sol M. Spriggs.
Yorkville.—Dr. W. M. Love, A. W. Gladden, J. F. Ashe.
Clover.—Dr. J. W. Campbell.
Rock Hill.—T. L. Johnson, President; J. Simpson, A. D. Holler, Dr. J. R. Miller, Maj. A. H. White, W. J. Caveny, Secretary.
Guthriesville.—Dr. W. M. Love, Secretary.

Climatological Data for South Carolina, 1907.

Collected, Arranged and Tabulated by J. W. Bauer, Section Director,
United States Weather Bureau.

Published by Authority of Prof. Willis L. Moore, Chief United States
Weather Bureau.

GENERAL SUMMARY.

The mean temperature for the year was above the normal, having been as high as the highest of record. The weather was unusually warm during the winter months, except in February, which had about normal temperature. Beginning early in April and continuing until late in June, the weather was unseasonably cool, especially in April, when freezing temperatures and a trace of snow occurred as late as the 9th, and frosts that were generally killing as late as the 15th. The variations from the normal temperatures were small during the rest of the year, except that in October there were two unseasonably cool periods, with frequent light frosts after the 13th, and killing frost on the 29th.

The annual mean temperature was 63.3°, which is 0.4° above the normal. At Beaufort, the warmest place, the mean temperature was 66.7°, and at Greenville, the coldest place, it was 57.4°. The annual mean temperature decreased with marked regularity from the extreme southeastern to the extreme northwestern portion.

The highest temperature for the year was 106°, recorded at Blackville, on July 8th; the lowest was 12°, recorded at Liberty, on December 5th, making the annual State range 94°.

The precipitation was in excess of the normal in a few of the east central counties and in the northern border counties, and it was largely deficient along the coast. The rest of the State received nearly normal rainfall. The precipitation was very light in the winter and early autumn, and was comparatively heavy in the spring and late autumn, and was about normal in the summer.

The average precipitation was 47.79 inches, which is 0.65 of an inch below the normal. The annual precipitation ranged from 72.71 inches, at Edisto, to 31.71 inches, at Charleston. The greatest local monthly rainfall was 12.38 inches at Darlington in June, the least was no rain at Aiken in October, and "trace" at Catawba and Yorkville in January.

The snowfall was light, having been the heaviest in the north central and northeastern counties, where the annual depths ranged from 3 to 8 inches. The southern half of the State received no appreciable amount of snow.

The average number of rainy days was 99, ranging from 69 days at Catawba to 133 days at Summerville. The percentage of sunshine was above the normal, there having been 157 clear days, 123 partly cloudy days and 75 cloudy days. The prevailing winds were from the southwest every month, except that in February, October and November they were from the northeast, from the south in September, and from the west in December.

WEATHER BY MONTHS.

January—The month was unusually warm, the mean temperature having been 7.7° above the normal. It was the warmest January of record. The unusual warmth occurred from the 1st to the 20th, after which the temperature averaged slightly below the normal. No cold waves occurred.

The precipitation was very light and less than that of any January in previous years. With the exception of small areas in the eastern and southern parts of the State, where from 1 inch to 2 inches were recorded, the average for the month was below an inch. A trace of snow fell in the extreme western portion, melting as it fell. Dense fogs were of frequent occurrence during the first two decades.

February—The weather was generally mild, with many rainy days during the first and second decades. Two short periods of cold weather caused freezing temperatures over the whole State. In the central and western divisions the temperature fell to freezing, or below, on from 8 to 20 days. No unusually low temperatures occurred during the month. The average precipitation was slightly below the normal. The rainfall was heaviest in the central portions and was lightest along the immediate coast. From one inch to nearly seven inches of snow fell in the north central and northeastern counties. Thunderstorms were general on the 14th, and sleet on the 7th, 20th and 24th.

March—The principal feature of the month was the very high temperatures that prevailed during the third decade, when maximum temperatures of 90° or above were recorded in all portions of the State. The mean temperature was 7.7° above the normal. It was the warmest March of record. Freezing temperatures occurred only in the extreme western portion. In the extreme western and a portion of the northeastern divisions, the precipitation amounted to from 2 inches to 3 inches, the remainder of the State received generally less than an inch. The percentage of sunshine was above the normal, the number of cloudy days having been unusually small for the season.

April—The first half of the month was very cold, the temperature increasing slowly to nearly normal warmth after the 17th. The mean temperature was the lowest of record, and was 5.7° below the normal. The 15th was an unseasonably cold day, thin ice and heavy to killing frosts having occurred generally except in the coast section. The average precipitation was above the normal and was well distributed. A small area in the southern portion had excessive precipitation. A trace of snow fell in the northwestern counties on the 9th. Thunderstorms were numerous during the third decade, and a number of them were accompanied by high winds.

May—The mean temperature was slightly below the normal. The precipitation was above the normal and was well distributed. A small area in the southern portion received an excessive amount. Thunderstorms were numerous, and some were accompanied by high winds.

June—The month was cool, the mean temperature having been below the normal. The precipitation was above the normal. All parts of the State received abundant rainfall, and small areas in the northeastern portion received excessive amounts. Thunderstorms were numerous and some were accompanied by hail and high, though not damaging, winds. The percentage of sunshine was approximately normal.

July—The mean temperature was as high as that of any July of previous years. There were two periods of excessive heat, when maximum temperatures of 100° or above were recorded except in the extreme northwestern portion and in the coast regions. The precipitation was below the normal. The greatest deficiencies occurred in the extreme eastern and western portions. The rainfall was about normal in the central counties. Thunderstorms occurred on 27 days and a few were accompanied by hail. The sunshine was about normal.

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August—The eastern divisions were slightly warmer than usual and the western division slightly cooler. Temperatures of 100° or above were recorded at only three stations. The precipitation averaged about normal and was well distributed. The east central counties received the heaviest amounts, ranging from 7 inches to nearly 12 inches. Thunderstorms occurred on 31 days, though they were comparatively infrequent after the 21st.

September—The weather was seasonable throughout the month, with the exception of a short cool period after the 25th. With the exception of small areas in the Savannah valley and in the coast regions, the precipitation was above normal, the amounts ranging from 6 inches to over 8 inches. The sunshine was abundant during the first and third decades, and the percentage of sunshine was low during the second decade.

October—The month was cool. Light frosts occurred on the 11th and 12th in the western counties, and light to killing frosts over the whole State from the 29th to the 31st. The precipitation was very light, the amounts having been generally less than an inch, except in the extreme southern portion, where from 2 to 3 inches were recorded. The percentage of sunshine was unusually high.

November—The month was cooler than usual and exceptionally low temperatures occurred from the 8th to the 15th, on which day killing frosts and freezing temperatures were recorded over the entire State. The precipitation was excessive in the western counties, where floods occurred, and it was deficient in the coast regions. A trace of snow fell in the extreme western portion on the 18th.

December—The month was cool during the first two decades and was unusually warm after the 20th. The precipitation was above the normal, having been heaviest in the western division after the 15th, causing three successive floods in the principal rivers. Early in the month snow fell to depths ranging from 1 inch to over 2 inches in the northern half of the State. No snow fell in the southern half.

KILLING FROSTS.

Stations.	Last in Spring	First in Autumn.
Aiken	April 14	Nov. 14
Allendale	April 15	Nov. 14
Anderson	April 15	Nov. 14
Batesburg	April 15	Oct. 14
Beaufort	April 15	Nov. 14
Bennettsville	April 15	Nov. 8
Blackville	April 15	Oct. 28
Blairs	April 15	Nov. 14
Bowman	April 15	Oct. 29
Calhoun Falls	April 15	Nov. 14
Camden	April 15	Nov. 14
Catawba..	April 15	Oct. 29
Chappels	April 15	Nov. 14
Charleston	April 15	Nov. 14
Cheraw	April 15	Oct. 30
Clarks Hill	April 15	Nov. 14
Clemson College	April 15	Nov. 14
Columbia	April 15	Oct. 29
Conway	April 15	Nov. 14
Darlington	April 15	Nov. 14
Dillon	April 15	Nov. 14
Due West	April 15	Nov. 14
Edisto	April 15	Nov. 14
Effingham	April 15	Nov. 14
Florence	April 14	Nov. 14
Georgetown	April 15	Nov. 13
Greenville	April 15	Nov. 14
Greenwood	April 15	Nov. 14
Heath Springs	April 15	Oct. 15
Kingstree	April 15	Oct. 29
Liberty	April 15	Nov. 14
Little Mountain	April 15	Nov. 14
Newberry	April 15	Oct. 15
Pelzer	April 15	Nov. 14
Pinopolis	April 15	Nov. 14
St. George	April 15	Nov. 14
St. Matthews	April 15	Nov. 14
Saluda	April 15	Nov. 4
Santuc	April 15	Nov. 4
Smith Mills	April 15	Nov. 14
Society Hill	April 14	Nov. 14
Spartanburg	April 15	Nov. 4
Stateburg	April 15	Nov. 16
Summerville	April 15	Nov. 14
Trenton	April 15	Nov. 13
Trial	April 15	Oct. 15
Walhalla	April 15	Nov. 14
Walterboro	April 15	Nov. 14
Winnsboro..	April 15	Nov. 13
Winthrop College	April 15	Nov. 14
Yemassee	April 15	Oct. 29
Yorkville	April 15	Nov. 14

COMPARATIVE ANNUAL DATA FOR THE STATE.

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Year.	Temperature.				Precipitation.				No. Rainy Days.	Prevail- ing Wind Direc- tion.			
	Mean.	Mean Maxi- mum.	Mean Mini- mum.	Maxi- mum.	Mini- mum.	Average.		Greatest Annual.			Least Annual.		
						Amount.	Place.	Amount.			Place.	Amount.	Place.
1898. . .	63.2	73.4	53.0	106	8	49.26	67.79	Gillisonville	38.74	Batesburg	sw.		
1899. . .	62.9	73.4	52.4	105	—12	46.55	58.27	Summerville	34.35	Effingham	sw.		
1900. . .	63.0	73.7	52.7	106		50.80	68.09	Holland	38.10	Charleston	sw.		
1901. . .	61.1	71.6	50.1	102	2	54.22	77.50	Greenville	32.70	Charleston	nw.		
1902. . .	62.7	73.3	52.1	107	10	46.77	57.33	Batesburg	37.11	Charleston	sw.		
1903. . .	62.2	72.6	51.7	105	10	50.87	67.39	St. Matthews	39.69	Calhoun Falls	sw.		
1904. . .	61.7	73.0	50.6	106	8	40.98	60.16	Smiths Mills	28.21	Aiken	w.		
1905. . .	62.6	73.2	50.6	107	0	45.10	56.06	Liberty	34.85	Charleston	ne.		
1906. . .	63.3	73.7	52.9	102	11	54.81	76.73	Clemson College	41.24	Blairs	sw.		
1907. . .	63.3	73.9	52.7	106	12	47.79	72.71	Edisto	31.71	Charleston	sw.		

Monthly Maximum Temperatures for the Year 1907, With Dates.

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.
Alken	76	14	70	3	93	23	87	30	91	19	97	9	103	24	98	8	96	3	86	7	76	9	73	9
Allendale	77	13	70	10	93	24	85	30	89	20	95	25	100	29	97	8	96	3	87	7	76	21	73	30
Anderson	76	14	67	10	93	20	81	30	90	19	96	21	103	7	101	31	94	3	85	9	87	5	67	30
Barksdale	77	8	78	19	92	23	86	27	90	19	96	22	102	23	96	7	92	1	82	1	76	9	66	6
Beaufort	77	14	78	23	93	23	79	29	88	20	95	9	101	9	97	31	93	3	82	1	79	22	70	6
Bennettsville	83	13	71	2	97	23	86	30	92	19	93	21	102	8	98	28	97	3	83	3	80	9	72	10
Blackville	79	16	74	2	99	23	89	26	95	24	99	25	106	8	101	31	98	3	83	3	79	21	75	25
Bowman	77	14	72	2	96	23	87	30	92	19	97	26	102	29	98	8	98	3	82	7	75	21	70	29
Camden (1)	77	14	68	14	94	23	84	30	90	19	92	25	100	23	92	2	94	3	82	7	75	21	67	30
Charleston	78	14	69	2	93	23	77	30	87	20	90	26	100	8	96	31	90	3	82	7	75	21	70	10
Cheraw	79	14	69	2	93	23	85	30	89	20	90	26	100	8	96	31	90	3	82	7	75	21	70	10
Clarks Hill	77	14	74	2	91	23	85	30	88	19	97	26	101	24	98	31	93	3	83	4	78	21	69	10
Clemson College	73	13	64	2	87	23	79	30	84	19	97	26	101	24	98	31	93	3	83	4	78	21	69	10
Columbia	78	13	68	19	92	23	85	30	90	19	94	26	101	8	91	31	88	2	82	4	76	9	68	30
Conway	79	13	76	19	96	23	83	29	91	20	93	27	103	9	97	29	95	3	84	4	71	9	65	30
Darlington	81	14	71	19	93	23	88	29	95	24	95	27	103	8	98	29	97	3	87	8	78	22	74	30
Dillon	81	14	71	19	93	23	88	29	95	24	95	27	103	8	98	29	97	3	87	8	78	22	74	30
Due West	75	14	65	10	90	20	81	30	88	19	91	22	97	7	95	8	96	3	89	7	78	9	71	30
Florence	75	14	65	10	90	20	81	30	88	19	91	22	97	7	95	8	96	3	89	7	78	9	71	30
Georgetown	89	13	71	2	92	23	87	30	93	24	99	19	102	8	96	28	97	3	89	20	79	10	70	10
Greenville	76	13	73	2	92	23	87	30	93	24	99	19	102	8	96	28	97	3	89	20	79	10	70	10
Heath Springs	72	14	66	18	89	21	79	30	85	18	87	20	95	8	93	20	88	2	80	4	72	9	66	30
Kingstree (1)	76	14	68	19	91	23	85	30	92	25	94	21	103	24	96	29	94	3	81	3	75	9	64	8
Liberty	78	14	71	15	95	23	85	30	90	19	94	25	103	8	94	29	96	3	81	3	75	9	64	8
Little Mountain	74	14	66	21	91	22	82	30	90	23	93	21	101	9	95	27	92	3	83	4	74	9	66	30
Newberry	78	14	72	14	92	22	84	30	96	20	96	21	101	9	95	27	92	3	83	4	74	9	66	30
Pinopolis	77	19	68	14	92	22	86	30	91	19	96	21	101	9	95	27	92	3	83	4	74	9	66	30
St George	76	14	69	2	89	23	80	28	89	19	90	25	99	24	98	31	90	3	85	7	77	9	70	30
St Matthews	76	14	70	27	92	23	84	30	88	19	93	25	99	24	98	31	90	3	85	7	77	9	70	30
Saluda	77	14	69	13	92	23	85	30	91	19	97	21	103	24	98	31	90	3	85	7	77	9	70	30

* On other dates also.

Monthly Maximum Temperatures for the Year 1907, With Dates (Continued).

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.
Santac Hill . . .	77	14	65	15	92	23	83	29	92	19	95	20	101	23	97	31	96	3	83	4	75	9	67	30
Society Hill . . .	76	13	67	*2	90	*22	83	30	88	*20	92	26	96	9	92	28	91	0	87	4	75	9	68	30
Spartanburg . . .	79	*14	70	13	95	23	83	29	90	*18	95	26	101	*7	97	31	94	0	87	4	78	9	68	30
Stateburg . . .	78	*14	71	*1	92	23	86	30	90	21	92	26	99	*8	92	28	93	0	84	5	79	9	69	*8
Summerville . . .	80	*14	73	*2	93	23	86	30	92	*9	95	26	103	24	96	31	98	*3	88	7	79	21	74	30
Trenton . . .	74	16	67	3	90	23	85	30	89	20	93	26	100	9	94	31	98	2	88	8	76	9	66	30
Trial . . .	79	25	75	3	95	23	85	30	91	*20	93	26	100	9	94	31	98	2	88	7	76	9	66	30
Walhalla . . .	80	*13	70	*10	94	22	86	30	90	*18	93	22	106	9	99	31	95	2	86	8	80	22	71	*8
Walterboro . . .	83	14	77	2	98	23	86	30	91	20	96	9	99	9	101	31	94	*1	91	*	75	8	62	9
Winnboro . . .	78	14	68	13	92	23	84	30	91	24	94	26	98	9	93	28	95	3	85	5	77	8	63	*9
Winthrop College . . .	78	14	62	*27	86	*22	81	*29	90	*19	92	20	100	*9	93	31	90	1	79	4	75	9	69	30
Yemassee . . .	77	14	74	2	92	30	84	30	89	24	92	25	99	9	97	8	93	3	84	*4	74	21	71	30
Yorkville . . .	79	*14	68	13	94	*23	86	30	93	24	93	*25	102	9	96	*7	94	3	84	4	77	*9	68	30

* On other dates also.

Monthly Minimum Temperatures for the Year 1907, With Dates.

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.
Alken	25	29	22	7	40	7	29	14	51	17	55	3	63	4	65	5	59	7	28	29	26	14	21	15
Allendale	28	29	18	8	41	7	31	15	33	13	59	3	68	9	68	1	60	24	36	29	32	14	27	15
Anderson	23	29	13	7	35	7	25	15	39	28	53	3	64	9	61	1	54	26	32	29	27	14	20	14
Barksdale	20	24	19	7	34	16	26	15	45	28	54	3	65	6	64	5	55	26	33	14	29	14	20	14
Batesburg	29	29	17	9	42	17	32	15	55	12	62	2	67	6	70	5	62	27	40	29	32	14	27	14
Beaufort	20	29	18	9	36	16	26	15	44	22	56	7	62	4	58	27	57	26	34	14	27	14	27	14
Bennettsville	25	24	25	7	38	16	26	15	44	22	56	7	62	4	58	27	57	26	34	14	27	14	27	14
Blackville	20	24	25	7	38	16	26	15	44	22	56	7	62	4	58	27	57	26	34	14	27	14	27	14
Bowman	20	24	25	7	38	16	26	15	44	22	56	7	62	4	58	27	57	26	34	14	27	14	27	14
Camden (1)	20	24	25	7	38	16	26	15	44	22	56	7	62	4	58	27	57	26	34	14	27	14	27	14
Charleston	31	29	27	7	45	7	38	15	48	28	57	3	64	9	64	9	57	26	31	29	28	14	27	14
Cheraw (1)	21	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Clarks Hill	21	29	22	7	38	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Clemson College	21	29	22	7	38	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Columbia	22	24	22	7	37	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Conway	22	24	22	7	37	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Darlington	18	29	19	6	29	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Dillon	21	29	22	7	37	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Due West	24	29	21	6	29	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Florence	22	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Georgetown	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Greenville	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Greenwood	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Heath Springs	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Kingstree	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Liberty	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Little Mountain	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Newberry	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Pinopolis	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
St. George	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
St. Matthews	20	24	21	7	31	7	27	15	48	13	56	3	61	6	70	11	53	26	29	29	28	14	27	14
Saluda	19	29	21	7	32	6	21	15	47	29	50	7	60	5	58	27	50	30	29	29	30	14	27	14

Monthly Minimum Temperatures for the Year 1907, With Dates (Continued).

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.
Santac	19	29	20	* 8	31	7	24	15	45	28	53	* 3	63	5	60	* 5	54	* 26	31	29	26	14	19	5
Society Hill	22	29	20	* 7	31	7	23	14	43	21	55	6	63	4	61	26	57	25	36	* 14	28	13	22	5
Spartanburg	19	29	20	* 7	32	7	22	12	43	23	52	6	63	5	57	4	52	* 26	33	15	25	15	22	5
Stateburg	23	29	22	* 9	30	7	20	12	53	* 13	52	3	66	5	65	4	53	* 26	36	29	23	16	24	5
Summerville	26	29	25	* 7	34	7	30	15	48	18	55	3	64	6	64	5	53	27	35	29	28	14	21	6
Trenton	23	29	22	* 7	38	16	30	14	48	18	55	3	62	8	64	2	56	28	35	29	27	14	22	6
Trial	23	29	25	* 7	31	* 7	26	15	45	18	55	2	62	19	64	2	56	28	31	29	27	14	22	6
Walhalla	23	29	23	* 7	36	4	28	11	43	28	47	28	65	5	64	* 4	56	26	30	* 29	26	14	21	6
Walterboro	27	24	25	9	36	7	28	15	49	18	58	7	65	6	64	3	61	27	33	29	28	14	20	5
Winnsboro	22	29	21	8	35	7	27	15	51	22	57	6	65	5	64	3	61	26	35	29	30	13	21	5
Winthrop College	20	24	18	7	35	7	25	* 14	45	29	54	6	64	5	60	4	54	26	34	* 16	27	14	18	5
Yemassee	27	22	24	10	36	7	28	13	51	18	60	* 4	65	5	65	5	61	27	34	29	29	14	23	5
Yorkville	23	24	20	7	37	* 4	27	15	47	28	54	6	65	5	61	4	53	26	35	29	30	14	20	5

* On other dates also.

CLIMATOLOGICAL DATA FOR THE YEAR 1907.

Stations.	Counties.	TEMPERATURE. (Degrees Fahrenheit.)				PRECIPITATION. (Inches.)						SKY.				Prevailing Di- rection of Wind		
		Elevation.	Length of Record.	Annual Mean.	Highest.	Date.	Lowest.	Date.	Length of Record.	Total for the Year.	Greatest Monthly.	Month.	Least Monthly	Month.	Total Snowfall		No. of Rainy Days.	No. of Clear Days.	No. of Partly Cloudy Days.	No. of Cloudy Days.
Aiken	Aiken	565	13 64.4	103	July 24	21	Dec.	9	13 44.63	6.87	July	0.00	Oct.	T	79 225	104	36	SW
Allendale	Barnwell	186	16 61.9	100	*July 9	27	Dec.	6	19 49.63	9.18	Sept.	0.65	March.	0	73	184	29 152	W
Anderson	Anderson	784	16 61.9	103	July 7	15	Dec.	5	61 19	6.58	Dec.	0.62	Jan.	1.6	184	29 152	W	
Batesburg	Lexington	656	19 62.7	102	July 23	19	Feb.	7	19 43.00	6.82	May	0.06	Oct.	T	85 188	59 118	SS	
Beaufort	Beaufort	20 21	16 67.1	101	July 9	27	*Feb.	9	21 44.20	7.20	Aug.	0.66	Jan.	0	123 157	140 68	SS	
Bennettsville	Marlboro	151	16 63.1	102	*July 8	18	*Feb.	9	63 7	5.58	June	0.29	Oct.	5.2	95 199	105 61	SS	
Blackville	Barnwell	296	19 65.9	106	July 8	24	Dec.	5	19 51.05	10.02	Sept.	0.50	Oct.	0	110 174	81 108	SW	
Blairs	Fairfield	233	61 63.1	102	July 9	20	Dec.	6	61 63.1	7.70	Dec.	0.36	Jan.	T	172 91	1102	SW	
Bowman Falls	Orangeburg	160	5 65.0	102	*July 9	20	Dec.	6	5 65.0	7.86	Sept.	0.45	Oct.	T	107 200	107 58	W	
Calhoun Falls	Abbeville	508	2 62.0	100	*July 23	18	Feb.	7	2 49.05	6.98	Sept.	0.55	Jan.	0	77 224	31 138	SW	
Camden (1)	Kershaw	222	61 63.1	102	July 23	18	Feb.	7	2 49.05	6.98	Sept.	0.46	Oct.	1.5	114 190	94 81	SW	
Camden (2)	Kershaw	222	61 63.1	102	July 23	18	Feb.	7	2 49.05	6.98	Sept.	0.46	Oct.	1.5	114 190	94 81	SW	
Catawba	York	550	61 63.1	102	July 23	18	Feb.	7	2 49.05	6.98	Sept.	0.46	Oct.	1.5	114 190	94 81	SW	
Chapin	Newberry	402	37 66.3	100	July 8	27	Feb.	7	37 31.1	8.32	Dec.	0.77	Jan.	0	86	170	70 125	SW
Charleston	Charleston	48 37	66.3	100	July 8	27	Feb.	7	37 31.1	8.32	Dec.	0.77	Jan.	0	86	170	70 125	SW
Charleston (1)	Chesterfield	144	18 61.0	97	July 8	19	Feb.	7	18 49.56	8.55	Aug.	0.30	Jan.	3.0	123 137	146 82	NE	
Cheraw (1)	Chesterfield	144	18 61.0	97	July 8	19	Feb.	7	18 49.56	8.55	Aug.	0.30	Jan.	3.0	123 137	146 82	NE	
Cheraw (2)	Chesterfield	144	18 61.0	97	July 8	19	Feb.	7	18 49.56	8.55	Aug.	0.30	Jan.	3.0	123 137	146 82	NE	
Clarks Hill	Edgefield	456	5 63.0	101	July 24	17	Dec.	5	5 45.76	6.88	Sept.	0.43	Oct.	2.5	89 126	63 72	SS	
Clemson College	Oconee	850	16 60.7	96	July 8	22	Feb.	5	16 43.36	7.45	Dec.	0.16	Jan.	1.0	84 226	63 72	SS	
Columbia	Richland	351	21 63.6	101	July 8	22	*Feb.	7	21 33.98	8.80	May	0.40	Oct.	1.0	121 104	150 111	SW	
Conway	Horry	25	6 64.0	103	July 9	21	*Feb.	7	16 61.77	9.72	July	0.77	Oct.	T	117 201	28 136	SW	
Darlington	Darlington	175	12 12	101	July 8	18	Jan.	29	12 12	12.38	June	0.17	Jan.	3.0	102	102	102	W
Dillon	Marion	100	4 62.9	103	July 7	21	Dec.	5	4 40.25	6.05	Dec.	1.02	Jan.	T	86 199	36 130	NE	
Due West	Abbeville	740	6 11	97	July 7	21	Dec.	5	6 11	6.05	Dec.	1.02	Jan.	1.0	85 241	12 111	SW	
Edisto	Bamberg	127	11 63.4	102	July 8	21	Feb.	7	14 72.71	10.90	June	0.76	Jan.	0	88 187	36 142	NE	
Ervingham	Florence	106	19 63.4	102	July 8	21	*Feb.	7	15 55.14	11.40	Aug.	0.51	Jan.	0	74 169	208 28	SW	
Florence	Florence	106	19 63.4	102	July 8	21	*Feb.	7	15 55.14	11.40	Aug.	0.51	Jan.	0	74 169	208 28	SW	
Georgetown	Georgetown	12 13	65.6	98	July 8	23	*Feb.	7	14 46.57	8.66	June	0.38	Oct.	0	71 104	202	32 131	SW
Greenville	Greenville	989	15 57.4	95	July 8	17	Feb.	8	15 47.11	8.66	June	0.80	Jan.	0	85 207	0 157	SW	
Greenwood	Greenwood	671	18 61.2	100	*July 23	21	Jan.	30	19 48.11	8.25	Nov	0.44	Jan.	0	85 207	0 157	SW	

* On other dates also.

CLIMATOLOGICAL DATA FOR THE YEAR 1907 (Continued).

Stations.	Counties.	TEMPERATURE. (Degrees, Fahrenheit.)					PRECIPITATION. (Inches.)					SKY.				Prevailing Di- rection of Wind					
		Elevation.	Length of Record.	Annual Mean.	Highest.	Date.	Lowest.	Date.	Length of Record.	Total for the Year.	Greatest Monthly.	Month.	Least Monthly	Month.	Total Snowfall		No. of Rainy Days.	No. of Partly Cloudy Days.	No. of Cloudy Days.		
Heath Springs	Lancaster	568	662.9	103	July 24	19	Feb.	7	651.03	7.13	Dec.	0.56	Oct.	0	104	156	128	81	W		
Kingstree (1)	Williamsburg	54	19	66.3	97	*July 8	23	Dec.	6	1945.94	8.22	Aug.	0.15	Oct.	0	110	214	34	92	NE	
Kingstree (2)	Williamsburg	54								1348.76	10.22	Aug.	0.15	Oct.	0	85	201	131	60	NE	
Liberty	Pickens	900	13	61.1	103	July 9	12	Dec.	5	1354.16	8.40	Dec.	0.76	Jan.	4.0	95	174	151	60	SW	
Little Mountain	Newberry	711	14	63.0	101	*July 9	21	Feb.	7	1441.69	7.53	July	0.062	Oct.	0.5	115	145	145	75	SW	
Newberry	Newberry	502	14	62.8	104	July 24	21	Jan.	29	1446.93	7.87	Dec.	0.56	Oct.	0.6	120	118	124	123	SW	
Pelzer	Anderson	873								445.62	6.77	Dec.	0.56	Jan.	2.0	92	165	78	122	SW	
Pinopolis	Berkeley	54	14			26	Feb.	7	1947.39	9.77	Sept.	0.44	Oct.	0	93	243					
St. George	Dorchester	109	19	66.3	99	July 9	21	Dec.	6	1947.39	8.18	Sept.	0.44	Oct.	0	93	243				
St. Matthews	Orangeburg	209	19	62.8	95	*July 9	23	Feb.	7	1953.11	8.60	June	0.25	Oct.	0	83	244				
St. Stephen	Berkeley	73							15	10.02	Aug.	0.95	March.		T	83	244				
Saluda	Saluda	530	6	62.9	103	July 24	19	Jan.	29	1340.76	6.83	Dec.	0.35	Oct.	0	113	196	53	108	NE	
Santac	Union	512	13	61.2	101	July 23	19	Jan.	29	1352.21	7.80	Sept.	0.50	Jan.	1.4	108	119	143	102	NE	
Smith Mills	Williamsburg	62								1248.47	11.32	Aug.	0.24	Oct.	0	98	202	11	152	NE	
Society Hill	Darlington	132	16	61.8	86	July 9	20	*Feb.	6	1648.40	7.25	June	0.44	Oct.	8.2	103	185	83	197	NE	
Spartanburg	Spartanburg	875	16	60.7	101	*July 8	22	Feb.	7	2749.89	8.28	June	0.38	Jan.	1.3	105	163	17	184	NE	
Stateburg	Sumter	500	27	64.4	99	July 8	22	Feb.	7	1650.70	7.40	Aug.	0.77	Jan.	3.0	109	8	110	94	NE	
Stateburg	Dorchester	75	10	65.9	101	July 8	22	Feb.	6	1044.70	7.35	Aug.	0.95	Jan.	0	133	81	150	94	SW	
Summerville	Edgefield	620	14	62.9	103	July 24	22	*Feb.	6	1443.65	8.24	Dec.	0.68	Oct.	0	98	147	156	49	SW	
Trenton	Berkeley	85	21	64.5	100	July 9	22	Dec.	6	21	53.17	8.93	Aug.	0.60	Oct.	0	111	109	170	86	NW
Trial	Oconee	106	17	61.4	105	July 9	22	Dec.	6	21	53.17	8.93	Aug.	0.60	Oct.	0	111	109	170	86	NW
Walhalla	Colleton	69	5	66.1	101	Aug. 31	20	Dec.	6	547.95	7.39	Sept.	0.58	Jan.	0	61	240	44	44	NW	
Walterboro	Fairfield	545	18	62.5	98	July 9	21	*Feb.	8	1852.57	8.00	Sept.	0.85	Oct.	0	132	159	141	58	SW	
Winnsboro	Fairfield	545	18	62.5	98	July 9	21	*Feb.	8	1852.57	8.00	Sept.	0.85	Oct.	0	132	159	141	58	SW	
Winthrop College	York	690	7	61.0	100	*July 9	18	*Feb.	7	749.30	7.03	Dec.	0.33	Jan.	1.0	84	190	133	42	SW	
Yemassee	Beaufort	23	12	64.3	99	July 9	22	Dec.	6	1254.14	9.35	Sept.	0.80	March.	1.0	105	208	98	62	SW	
Yorkville	York	680	19	62.5	102	July 9	20	*Feb.	7	1952.05	8.70	Dec.	0.80	March.	4.0	100	118	208	36	121	SW
For the State		...	63.3	106	July 8	12	Dec.	5	47.79	12.38	June	0.00	Oct.	1.0	99	157	123	75	SW		

* On other dates also.

MONTHLY AND ANNUAL PRECIPITATION FOR THE

Stations.	January.		February.		March.		April.		May.		June.	
	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.
Aiken..	1.35	-2.76	4.20	+0.09	0.95	-3.65	4.15	+0.99	3.57	-0.26	4.92	+0.00
Allendale ..	0.84	-2.10	3.95	+0.46	0.65	-2.66	4.39	+2.14	6.50	+2.83	7.01	+2.00
Anderson ..	0.62	-4.87	3.38	-2.56	1.96	-3.12	.....	.....	3.49	+0.05	4.01	-1.00
Barksdale ..	.....	.....	.....	.....	.....	.....	.....	.....	1.98	.....	7.08	.....
Batesburg ..	0.56	-3.38	5.31	-0.92	0.96	-3.04	4.25	+1.20	6.82	+3.16	4.06	+0.00
Beaufort ..	0.66	-2.09	2.17	-1.35	1.37	-1.72	3.73	+1.53	3.72	+1.29	6.83	+1.00
Bennettsville..	0.41	.....	4.43	.....	1.81	.....	3.74	.....	4.38	.....	5.58	.....
Blackville ..	0.74	-2.76	4.41	-0.58	0.59	-2.98	4.50	+0.90	5.67	+1.86	7.29	+2.00
Blairs ..	0.36	.....	4.22	.....	1.52	.....	3.78	.....	.....	.....	6.04	.....
Bowman ..	1.67	.....	2.21	.....	1.69	.....	7.52	.....	8.97	.....	5.02	.....
Calhoun Falls..	0.55	-3.54	3.86	-0.58	2.69	-1.78	3.40	-0.71	3.57	+0.10	4.10	+0.00
Camden (1) ..	0.67	.....	4.27	.....	1.46	.....	3.04	.....	6.16	.....	5.82	.....
Camden (2) ..	0.30	-3.04	3.04	-0.85	1.20	-2.27	2.72	-0.55	4.69	+1.44	6.35	+2.00
Catawba ..	T	.....	2.84	.....	1.10	.....	4.36	.....	2.52	.....	8.36	.....
Chappells ..	0.77	.....	4.38	.....	1.26	.....	3.78	.....	2.24	.....	4.98	.....
Charleston ..	0.88	-2.57	1.61	-1.80	1.01	-2.71	3.72	+0.73	2.98	-0.49	4.58	-0.00
Cheraw (1) ..	0.47	-2.84	4.66	+0.34	1.78	-1.95	4.99	+1.72	5.11	+1.18	8.55	+3.00
Cheraw (2) ..	0.54	-2.32	4.72	-0.05	1.84	-1.87	5.21	+1.36	5.54	+1.44	8.43	+2.00
Clarks Hill ..	1.57	.....	4.90	.....	1.06	.....	3.65	.....	2.76	.....	4.95	.....
Clemson College	1.16	-3.47	3.62	-1.83	3.11	-1.36	4.67	+0.77	4.29	+1.08	2.22	-3.00
Columbia ..	0.80	-2.49	3.65	-0.94	0.88	-2.82	2.61	-0.25	5.80	+2.61	2.63	-1.00
Conway ..	0.85	-2.89	3.10	-1.48	1.37	-2.20	7.89	+5.05	4.14	+0.68	9.21	+4.00
Darlington ..	0.42	-1.90	4.24	-0.72	2.58	-0.62	3.94	-0.40	4.79	+2.13	12.38	+6.00
Dillon ..	0.27	.....	4.62	.....	2.23	.....	3.24	.....	3.21	.....	6.75	.....
Due West ..	1.02	.....	4.09	.....	1.78	.....	3.14	.....	4.54	.....	5.07	.....
Edisto ..	0.76	-2.47	4.64	-0.07	2.18	-1.40	9.07	+5.26	7.26	+4.20	10.90	+5.00
Effingham ..	0.51	-2.91	4.50	-0.12	0.75	-2.17	5.13	+2.15	5.55	+2.04	8.90	+4.00
Ferguson ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Florence ..	0.26	-2.28	3.43	-1.70	1.13	-1.77	4.35	+1.04	3.38	-0.36	7.21	+1.00
Georgetown ..	1.91	-1.96	1.90	-1.46	1.21	-1.86	6.03	+2.71	3.54	+0.19	4.88	-1.00
Greenville ..	0.38	-4.29	2.23	-2.65	2.14	-3.08	3.37	-1.04	4.32	+0.82	6.90	+1.00
Greenwood ..	0.44	-3.32	3.72	-1.17	1.94	-2.37	3.52	-0.39	2.35	-1.45	6.32	+2.00
Heath Springs	0.86	.....	3.86	.....	1.60	.....	4.52	.....	5.27	.....	5.27	.....
Kingstree (1) ..	0.86	-2.44	2.42	-1.57	1.05	-1.82	6.04	+3.35	2.58	-0.70	6.11	+1.00
Kingstree (2) ..	0.86	-2.36	2.59	-1.53	1.24	-1.60	5.72	+2.52	2.19	-0.57	6.79	+1.00
Liberty ..	0.76	-4.49	3.32	-2.11	2.78	-2.28	4.81	+0.49	6.11	+3.18	4.20	-0.00
Little Mountain	0.71	-2.72	4.05	-1.15	2.23	-1.33	3.83	-0.60	3.68	+0.53	2.68	-1.00
Newberry ..	1.00	-3.28	4.24	-1.48	3.32	-1.86	3.26	-1.16	6.38	+3.88	2.90	-1.00
Pelzer ..	0.56	.....	3.06	.....	2.04	.....	5.60	.....	4.50	.....	4.40	.....
Pinopolis ..	.....	.....	3.92	-0.78	2.00	-1.06	4.37	+0.86	.....	.....	4.44	-3.00
St. George ..	1.23	-1.92	3.06	-1.11	0.90	-2.39	5.50	+2.30	5.23	+2.09	4.91	-0.00
St. Matthews ..	0.83	-1.90	5.33	+0.57	0.84	-2.35	5.38	+1.76	5.44	+2.14	8.60	+3.00
St. Stephen ..	1.09	-2.24	2.64	-1.72	0.95	-2.13	6.65	+3.87	3.01	-1.05	7.02	+0.00
Saluda ..	0.81	.....	4.76	.....	1.70	.....	2.86	.....	3.24	.....	3.32	.....
Santuc ..	0.50	-3.11	4.07	-0.97	2.45	-2.00	4.78	+0.78	3.28	+0.43	4.28	+1.00
Smith Mills ..	0.25	-2.52	3.63	-0.56	0.90	-2.56	7.80	+3.78	3.73	-1.06	4.50	-1.00
Society Hill ..	0.44	-2.72	5.69	+0.49	2.54	-0.81	2.66	-1.57	5.19	+1.79	7.25	+1.00
Spartanburg ..	0.38	-2.71	2.89	-2.55	1.21	-3.00	3.72	-0.44	4.12	+1.02	8.28	+3.00
Stateburg ..	0.77	-2.80	5.93	+1.90	1.79	-1.95	3.38	+0.29	5.40	+2.00	6.30	+2.00
Summerville ..	0.95	-2.60	2.11	-2.26	0.93	-2.23	5.38	+2.21	2.85	-0.63	3.70	-2.00
Sumter ..	1.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trenton ..	1.07	-2.84	4.26	-2.43	1.64	-1.60	3.51	-0.62	5.14	2.23	2.66	-1.00
Trial ..	0.82	-2.80	3.14	-0.96	0.98	-2.64	5.05	+2.48	7.06	+2.45	5.33	-0.00
Walhalla ..	0.58	-3.56	3.89	-0.43	2.83	-3.95	5.67	-0.03	4.53	+1.59	4.55	-0.00
Walterboro ..	0.94	.....	2.55	.....	1.24	.....	4.08	.....	4.21	.....	5.84	.....
Winnboro ..	1.70	-1.47	4.65	+0.04	1.95	-1.66	2.40	-0.53	6.55	+3.25	5.73	+1.00
Winthrop College..	0.33	-3.18	4.26	+0.43	2.18	-2.08	3.36	0.00	4.39	+0.95	6.09	+1.00
Yemassee ..	1.37	-0.93	2.10	-2.36	0.80	-2.25	4.05	+0.98	4.70	+2.20	6.32	+0.00
Yorkville ..	T	-3.86	3.52	-1.25	1.99	-2.91	3.62	-0.16	6.12	+2.54	5.46	+0.00
For the State ..	0.71	-2.88	3.63	-1.08	1.57	-2.30	4.40	+1.05	4.51	+1.12	5.92	+1.00

Note.—In the footings, Departures for the month and year are taken for stations

HE YEAR 1907, WITH DEPARTURES FROM THE NORMAL.

June.		July.		August.		September.		October.		November.		December.		Annual.	
Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.
.92	+0.66	6.87	+2.02	5.72	-0.92	3.42	-1.32	0.00	-3.09	4.30	-1.61	5.18	+2.06	44.63	-4.57
.01	+2.46	5.33	-0.48	4.57	-3.01	9.18	+4.92	0.76	-1.74	2.75	+0.33	3.70	+1.48	49.63	+4.63
.01	-1.42	4.41	-0.43	4.43	-1.39	4.48	+0.78	1.14	-1.80	6.03	+2.78	6.58	+3.58	.....	.....
.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.86	+0.40	3.34	-3.00	4.11	-1.50	4.10	-0.16	0.06	-3.22	3.97	+1.33	5.46	+3.01	43.00	-6.12
.83	+1.75	5.96	+0.23	7.20	+0.51	3.61	-1.73	2.32	-1.32	1.92	-0.33	4.71	+2.30	44.20	-0.93
.58	.....	3.43	.....	2.20	.....	4.41	.....	0.29	.....	3.67	.....	3.12	.....	37.47	.....
.29	+2.04	4.80	-0.93	4.05	-1.94	10.02	+6.04	0.50	-2.72	3.70	+1.62	4.78	+1.17	51.05	+1.72
.04	.....	5.18	.....	3.38	.....	3.53	.....	0.50	.....	6.26	.....	7.70	.....	.....	.....
.10	.....	4.78	.....	7.23	.....	9.86	.....	0.49	.....	2.76	.....	6.41	.....	58.61	.....
.02	+0.09	3.73	-0.82	3.29	-4.09	4.25	+0.21	0.58	-3.23	5.97	+2.65	7.84	+4.20	43.83	-7.50
.35	.....	4.51	.....	5.74	.....	6.98	.....	0.46	.....	3.96	.....	5.98	.....	49.05	.....
.82	+2.26	3.94	-1.10	7.91	+2.99	6.10	+2.21	0.43	-2.25	3.04	+0.70	4.60	+1.45	44.32	+0.99
.36	.....	4.42	.....	3.06	.....	7.91	.....	0.90	.....	6.10	.....	7.55	.....	49.12	.....
.98	.....	3.42	.....	4.04	.....	3.97	.....	0.90	.....	6.01	.....	8.32	.....	44.07	.....
.58	-0.81	2.33	-4.93	5.04	-1.93	2.73	-2.73	1.53	-2.40	1.22	-1.65	4.08	+0.83	31.71	-20.36
.55	+3.46	2.63	-3.92	5.13	-0.25	5.81	+2.01	0.34	-2.41	4.68	+2.48	4.41	+1.81	48.56	+1.63
.43	+2.42	2.69	-3.73	5.11	-0.64	5.68	+1.66	0.37	-2.68	4.73	+1.81	4.50	+1.38	49.36	-1.22
.95	.....	5.97	.....	2.45	.....	6.88	.....	0.43	.....	4.40	.....	6.74	.....	45.76	.....
.22	-3.54	2.41	-2.80	4.74	-0.18	3.26	-0.67	1.58	-1.52	4.85	+1.64	7.45	+3.91	43.36	-7.97
.63	-1.55	3.56	-2.50	4.67	-2.11	5.72	+2.27	0.40	-2.45	4.04	+1.81	4.22	+1.32	38.98	-7.10
.21	+4.40	9.72	+2.87	8.67	+2.46	8.55	+4.93	0.77	-1.82	2.78	+0.02	4.72	+2.16	61.77	+14.18
.38	-6.14	4.92	-0.52	3.51	-1.03	4.42	-1.65	0.17	-2.83	.....	.....	.....	.....	.....	.....
.07	.....	3.06	.....	4.31	.....	4.11	.....	0.85	.....	2.98	.....	4.62	.....	40.25	.....
.75	.....	4.22	.....	3.06	.....	.....	.....	.....	.....	6.05	.....	.....	.....	.....	.....
.90	+5.19	9.01	+4.03	6.75	+1.50	8.42	+5.14	1.01	-1.98	6.96	+3.82	5.75	+2.68	72.71	+26.20
.90	+4.49	4.90	+0.26	11.40	+5.66	3.80	+0.40	1.00	-1.67	4.80	+2.14	3.90	+0.69	55.14	+10.56
.21	+1.77	4.91	-0.45	2.06	-3.76	4.86	+1.18	0.55	-2.36	3.06	+0.61	4.18	+1.72	39.38	-6.46
.88	-1.14	8.66	+0.74	6.51	+0.51	5.04	+2.00	0.80	-2.49	2.16	-0.34	3.93	+0.61	46.57	-2.69
.90	+1.16	2.27	-3.42	5.05	-0.51	6.31	+2.24	1.27	-1.50	6.05	+2.15	6.82	+3.62	47.11	-6.10
.32	+2.19	3.83	-1.09	3.71	-1.81	5.43	+0.87	1.25	-1.53	8.25	+5.21	7.35	+4.11	48.11	-0.76
.27	.....	4.78	.....	5.70	.....	6.65	.....	0.56	.....	4.83	.....	7.13	.....	51.03	.....
.11	+1.07	6.54	+0.81	8.23	+2.15	4.72	+0.70	0.15	-2.13	2.42	-0.41	4.82	+1.77	45.94	+0.78
.79	+1.73	5.78	+0.04	10.22	+3.54	5.23	+1.98	0.15	-2.51	2.73	-0.12	5.26	+1.95	48.76	+3.07
.20	-0.79	5.96	+0.27	4.35	-3.48	5.57	-0.08	1.32	-2.34	6.58	+3.65	8.40	+4.99	54.16	-2.99
.68	-1.79	7.53	+2.12	2.99	-2.15	4.52	+1.02	0.62	-2.72	4.55	+1.84	4.30	+1.32	41.69	-5.63
.90	-1.24	3.66	-2.32	5.24	-0.06	3.91	+0.27	0.56	-2.87	5.59	+2.27	7.87	+4.63	46.93	-3.22
.44	.....	3.58	.....	2.70	.....	5.38	.....	1.30	.....	5.73	.....	6.77	.....	45.62	.....
.40	-3.19	.....	.....	.....	.....	9.77	+6.09	.....	.....	.....	.....	.....	.....	.....	.....
.91	-0.57	5.99	-0.05	5.52	0.88	8.18	+2.93	0.44	-1.97	1.74	-0.72	4.69	+1.23	47.39	-1.06
.60	+3.30	6.12	-0.46	3.03	-3.29	7.38	+0.79	0.25	-2.23	5.43	+3.26	4.48	+1.55	53.11	+6.14
.02	+0.71	8.47	+2.58	10.02	+2.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.32	.....	2.99	.....	4.02	.....	5.44	.....	0.35	.....	4.44	.....	6.83	.....	40.76	.....
.28	+0.40	6.27	+1.18	3.43	-1.66	7.80	+4.40	1.16	-2.50	7.06	+3.80	7.13	+3.94	52.21	+4.69
.50	-1.42	4.49	-2.30	11.32	+4.65	7.13	+3.79	0.24	-4.07	1.37	-1.97	3.11	-1.08	48.47	-5.32
.25	+1.67	4.08	-2.62	6.60	+0.98	5.85	-1.43	0.48	-3.08	3.84	+1.30	3.78	+1.00	48.40	-2.14
.28	+3.94	3.39	-0.84	4.08	-1.45	6.83	+2.66	1.15	-1.93	6.44	+3.29	8.21	+5.63	50.70	+3.62
.30	+2.06	4.35	-0.81	7.40	+2.27	5.28	+2.11	0.87	-2.29	4.44	+2.36	4.08	+1.10	49.99	+6.24
.70	-2.28	5.35	-0.48	7.35	-1.23	6.39	+2.72	0.97	-2.93	2.12	-0.98	6.60	+2.99	44.70	-7.70
.66	-1.66	4.33	-1.90	3.45	-3.45	4.63	+0.87	0.68	-3.06	4.04	+1.15	8.24	+4.91	43.65	-8.40
.33	-0.60	6.98	+0.40	8.93	+1.31	6.98	+3.01	0.60	-2.64	2.13	-0.44	5.17	+2.14	53.17	+1.71
.55	-0.37	5.40	+0.10	4.07	-1.85	4.69	-0.09	1.85	-1.55	.....	.....	.....	.....	.....	.....
.84	.....	5.91	.....	6.18	.....	7.39	.....	0.85	.....	1.55	.....	2.21	.....	47.95	.....
.73	+1.58	7.63	+2.63	4.62	-0.18	8.00	+4.17	0.52	-2.06	2.68	-0.32	6.14	+3.34	52.57	.....
.09	+1.32	4.85	-0.37	4.32	-0.06	5.81	+1.69	0.82	-2.36	5.86	+2.87	7.03	+4.19	49.30	+8.79
.32	-0.73	8.94	+3.13	5.02	-1.75	9.35	+6.33	2.10	-0.62	1.61	-0.93	7.78	+4.18	54.14	+8.71
.46	+0.47	3.51	-1.92	7.13	+2.17	5.78	+1.40	0.70	-3.08	5.62	+2.54	8.70	+5.22	52.05	+1.66
.92	+1.16	5.06	-0.55	5.41	-0.12	5.91	+1.86	0.73	-2.40	4.13	+1.32	5.81	+2.14	47.79	-0.65

tions having ten or more years' record.

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR THE Y

Stations.	January.		February.		March.		April.		May.		June.	
	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.
Aiken	53.8	+7.9	47.6	—1.9	64.5	+9.9	57.0	—6.0	71.5	—0.7	76.7	—2.1
Allendale	55.4	+11.6	44.4	—0.1	64.2	+8.1	57.0	—7.5	71.8	—0.8	78.2	+0.1
Anderson	51.2	+9.8	44.6	+1.7	60.8	+9.9	55.0	—5.1	68.6	—0.7	74.0	+1.1
Barksdale	52.4	+6.2	45.7	+0.3	64.0	+9.1	55.8	—6.7	69.4	—0.1	73.8	—0.1
Batesburg	57.7	+7.4	52.0	—0.8	66.0	+7.5	59.0	—6.9	70.5	—1.2	75.8	+0.3
Beaufort	50.0	—0.1	44.4	—0.1	62.6	—0.1	56.2	—0.1	72.4	—1.7	77.4	+0.3
Bennettsville	55.0	+9.1	49.1	+3.2	65.8	+9.2	59.4	—4.7	70.2	—0.2	75.2	—0.1
Blackville	53.5	—0.1	47.4	—0.1	64.8	—0.1	58.7	—0.1	72.0	—0.1	77.2	—0.1
Bowman	52.3	—0.1	43.9	—0.1	61.5	—0.1	55.5	—0.1	69.2	—0.1	74.3	—0.1
Camden (1)	56.6	+7.3	50.0	—1.7	65.0	+7.8	58.0	—5.8	72.0	—0.4	76.9	—0.1
Charleston	49.4	+6.8	41.4	—4.9	58.8	+5.8	55.0	—6.6	68.4	—2.7	74.2	—0.1
Cheraw (1)	53.4	—0.1	46.0	—0.1	62.5	—0.1	56.0	—0.1	69.3	—0.1	77.3	—0.1
Clarks Hill	52.1	+10.2	43.5	+1.7	59.4	+6.7	54.8	—4.4	67.7	—2.6	73.0	—0.1
Clemson College	53.2	+8.1	45.7	—2.1	62.7	+8.7	56.9	—5.9	70.5	—1.3	75.8	—0.1
Columbia	52.8	—0.1	45.4	—0.1	62.1	—0.1	56.7	—0.1	70.8	—0.1	75.2	—0.1
Conway	51.6	—0.1	43.4	—0.1	61.2	—0.1	56.6	—0.1	70.7	—0.1	74.4	—0.1
Darlington	51.6	—0.1	44.0	—0.1	61.0	—0.1	55.7	—0.1	69.4	—0.1	74.7	—0.1
Dillon	52.2	—0.1	45.5	—0.1	61.4	—0.1	55.6	—0.1	69.4	—0.1	74.2	—0.1
Due West	51.9	+8.3	44.2	—2.8	59.8	+4.7	56.1	—5.9	70.6	—2.1	76.2	—0.1
Florence	54.3	+6.7	48.6	+0.7	64.4	+7.1	57.8	—5.2	72.4	+0.4	77.6	—0.1
Georgetown	47.2	+6.4	39.4	—0.8	55.0	+5.3	50.8	—6.9	64.2	—3.8	70.0	—0.1
Greenville	50.8	+9.2	42.6	0.0	59.5	+4.8	54.6	—6.5	68.8	—2.8	74.4	—0.1
Greenwood	51.0	—0.1	42.8	—0.1	61.7	—0.1	56.5	—0.1	70.7	—0.1	76.6	—0.1
Heath Springs	56.2	+9.6	50.6	+4.0	68.2	+11.8	60.4	—2.5	73.1	+0.8	78.2	—0.1
Kingstree (1)	51.3	+10.4	45.8	+2.6	60.4	+9.0	55.0	—5.0	68.2	—2.9	74.0	—0.1
Liberty	52.4	+7.1	45.0	—0.3	62.0	+6.7	55.5	—6.7	70.0	—2.5	76.0	—0.1
Little Mountain	51.8	+9.3	44.0	+0.6	60.5	+7.1	56.5	—4.9	70.3	—0.7	76.2	—0.1
Newberry	52.2	—0.1	49.6	+1.9	64.6	+9.0	58.2	—3.7	73.6	—0.1	78.6	+0.3
Pinopolis	56.2	+9.8	50.5	+3.6	65.5	+8.7	58.9	—4.7	73.6	+1.3	79.0	+0.0
St. George	52.8	+5.9	46.3	—0.1	62.2	+7.1	56.4	—7.6	69.8	—3.1	74.8	—0.1
St. Matthews	52.3	—0.1	45.4	—0.1	62.2	—0.1	56.0	—0.1	70.2	—0.1	75.4	—0.1
Saluda	50.7	+8.2	42.8	+0.6	59.6	+7.0	54.5	—5.4	68.2	—1.8	73.3	—0.1
Santuc	50.4	+7.3	42.8	—2.4	60.2	+5.1	56.0	—6.3	69.2	—2.8	74.8	—0.1
Society Hill	49.8	+7.7	41.6	—2.6	58.6	+8.4	53.7	—6.7	67.6	—3.0	73.8	—0.1
Spartanburg	54.8	+9.6	46.6	—2.6	64.3	+10.2	58.1	—4.7	70.6	—1.0	75.6	—0.1
Stateburg	56.8	+8.8	49.6	+1.1	66.2	+9.7	59.2	—3.4	71.9	+0.5	76.8	+0.0
Summersville	52.6	+5.1	45.5	—1.7	60.6	+3.4	56.3	—8.4	71.0	—2.9	76.0	—0.3
Trenton	55.5	+8.3	47.4	—1.6	64.0	+9.1	57.4	—4.5	71.0	+0.6	78.2	+1.1
Trial	52.7	+10.6	45.2	+0.4	61.4	+11.4	53.4	—6.1	66.8	—0.5	72.2	+0.3
Walhalla	54.7	—0.1	50.8	—0.1	67.6	—0.1	59.5	—0.1	72.2	—0.1	76.5	—0.1
Walterboro	53.3	+10.1	44.7	—1.9	61.2	+9.1	54.7	—6.5	69.2	—2.3	75.1	—0.1
Winnsboro	51.0	+7.8	42.8	—3.0	58.2	+5.6	53.9	—7.5	68.8	—2.6	73.6	—0.1
Winthrop College	55.0	+6.7	49.0	—0.3	64.6	+6.0	57.4	—6.6	70.5	—4.1	75.6	—0.1
Yemassee	51.4	+8.3	43.6	—1.4	60.5	+7.4	55.8	—5.8	69.7	—1.6	75.4	—0.1
Yorkville	53.4	+7.7	45.1	—0.7	62.0	+7.7	56.4	—5.7	70.8	—1.4	75.4	—0.1
For the State												

Note.—In the footings, Departures for the month and year are taken for stations h

THE YEAR 1907, WITH DEPARTURES FROM THE NORMAL.

June.		July.		August.		September.		October.		November.		December.		Annual.	
Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.	Mean	Dep.
76.7	-2.1	81.8	+0.7	79.8	+0.8	77.0	+3.0	62.6	-1.3	53.6	-1.3	47.3	-1.3	64.4	+0.7
78.2	+0.5	83.3	+2.5	81.7	+1.8	78.4	+3.1	63.9	-0.4	54.4	-1.1	48.7	+2.6	.....	.....
74.0	-1.9	81.2	+3.1	78.3	+1.1	74.6	+2.7	60.3	-0.1	51.2	+1.1	42.8	-1.2	61.9	+1.7
73.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
75.8	-3.0	81.4	+1.5	78.2	-1.0	74.4	+0.4	60.2	-2.9	50.9	-3.2	45.1	-1.3	62.9	-0.1
77.4	-3.0	82.1	+0.1	80.7	-1.0	78.9	+1.7	65.2	-2.5	57.6	-1.7	51.8	-0.5	66.7	-0.1
75.2	.....	81.4	.....	80.0	.....	77.0	.....	60.6	.....	52.7	.....	46.4	.....	63.1	.....
79.0	-1.1	83.8	+2.4	81.8	-1.5	76.6	+1.4	63.2	-1.0	54.3	-1.4	50.2	+3.3	65.9	+1.8
77.2	.....	83.0	.....	80.9	.....	77.3	.....	62.8	.....	53.7	.....	48.1	.....	65.0	.....
74.3	.....	80.3	.....	76.8	.....	74.1	.....	60.0	.....	50.4	.....	45.5	.....	62.0	.....
76.9	-1.6	82.3	+1.0	81.2	+0.9	79.4	+3.2	65.0	-2.1	58.0	-0.1	51.6	+0.3	66.3	+0.7
74.2	-4.2	80.2	-0.3	77.7	-1.4	74.6	+1.0	58.8	-2.4	49.6	-3.2	44.2	-0.3	61.0	-1.1
77.3	.....	80.6	.....	78.4	.....	75.2	.....	60.8	.....	51.5	.....	44.9	.....	63.0	.....
73.0	-4.1	80.0	+1.0	76.8	-3.3	72.8	-0.5	57.2	-5.9	49.0	-2.2	42.0	-0.5	60.7	-0.3
75.8	-3.4	81.7	+0.6	79.8	+0.3	76.4	+2.7	61.4	-2.6	52.4	-1.4	46.6	-0.6	63.6	+0.4
75.2	.....	82.4	.....	80.4	.....	78.2	.....	61.5	.....	53.2	.....	58.8	.....	63.0	.....
74.4	.....	81.8	.....	79.6	.....	76.7	.....	60.6	.....	.....	.....	44.0	.....	.....	.....
74.7	.....	81.8	.....	80.3	.....	77.6	.....	60.2	.....	52.0	.....	46.8	.....	62.9	.....
74.2	.....	80.7	.....	78.8	.....	.....	.....	.....	.....	.....	.....	45.2	.....	.....	.....
76.2	-2.8	82.3	+1.0	80.6	+0.1	77.7	+3.0	61.6	-1.6	53.2	-2.1	46.6	+3.0	63.4	+0.2
77.6	-1.3	82.9	+2.4	81.1	+0.3	79.1	+3.3	62.6	-2.6	56.0	-0.7	51.0	+2.3	65.6	+1.1
70.0	-4.1	76.4	0.0	73.9	-3.2	69.7	-1.9	55.7	-5.2	45.0	-5.5	41.3	-0.2	57.4	-1.6
74.4	-4.2	81.2	+1.2	78.2	-1.0	73.4	+0.3	59.6	-2.7	48.4	-4.0	41.9	-0.8	61.2	-0.5
76.6	.....	83.8	.....	80.0	.....	75.3	.....	62.1	.....	50.3	.....	44.2	.....	62.9	.....
78.2	-0.4	83.2	+2.6	80.2	+0.2	78.1	+4.6	62.4	-2.4	55.4	-0.1	50.0	+2.9	66.3	+2.4
74.0	-3.2	80.4	+1.4	77.6	+0.2	73.7	+0.5	58.5	-1.5	49.0	-1.3	41.4	-1.2	61.1	+0.7
76.0	-2.8	81.1	+0.6	79.4	-0.8	76.3	+0.4	61.4	-3.6	51.2	-4.3	46.0	-0.9	63.0	-0.6
76.2	-1.2	82.8	+3.7	80.3	+1.4	76.2	+2.3	60.9	-1.4	50.2	-2.9	44.4	-1.8	62.8	+0.9
78.6	-3.6	.....	.....	76.9	+2.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
79.0	-0.8	84.0	+3.6	81.3	+1.6	77.8	+2.9	62.8	-1.3	55.9	+0.1	50.4	+3.0	68.3	+2.4
74.8	-4.2	80.1	-0.3	77.8	-2.6	74.8	-0.3	60.4	-4.1	52.1	-3.7	46.2	-0.9	62.8	-1.2
75.4	.....	81.4	.....	79.4	.....	75.8	.....	60.8	.....	51.8	.....	44.4	.....	62.9	.....
73.3	-3.4	80.6	+1.8	78.6	+0.1	75.0	+1.8	59.4	-2.3	49.0	-2.5	43.0	-0.5	61.2	+0.3
74.8	-2.4	81.2	+2.3	78.0	-0.4	75.0	+1.8	59.0	-2.8	50.5	-2.6	45.1	-0.6	61.8	-0.4
73.8	-4.2	81.0	+1.8	77.8	-1.2	74.2	+1.6	59.4	-1.6	48.8	-2.9	41.7	-1.9	60.7	-0.3
75.6	-1.5	81.5	+2.7	78.8	+1.1	76.9	+3.2	62.2	-1.3	54.2	0.0	48.6	+1.0	64.4	+1.5
76.8	+0.1	82.0	+2.8	80.1	+0.1	78.6	+3.6	63.5	-2.5	56.2	+0.1	49.9	+1.1	65.9	+1.8
76.0	-3.5	81.6	+0.8	78.7	-1.7	75.2	-1.8	61.0	-5.0	51.2	-5.1	45.0	-3.2	62.9	-2.0
78.2	+1.4	80.8	+2.1	78.0	+0.3	77.4	+3.9	61.5	-1.6	54.2	-1.7	48.6	-1.9	64.5	+1.4
72.2	-5.1	81.0	+4.5	77.8	+1.1	71.1	+0.7	62.6	+3.0	50.0	+0.4	42.4	-1.9	61.4	+1.7
76.5	.....	79.8	.....	80.8	.....	79.1	.....	64.8	.....	57.7	.....	50.1	.....	66.1	.....
75.1	-1.4	80.8	+1.9	78.6	+0.6	75.4	+2.5	61.1	-1.1	51.2	-2.3	44.8	-1.9	62.5	+0.6
73.6	-3.2	80.2	-1.2	77.4	-0.6	73.6	+0.4	58.7	-3.4	50.0	-3.3	44.1	-2.3	61.0	-0.8
75.6	-5.5	81.0	-1.8	79.4	-2.2	76.0	-0.5	60.2	-5.7	53.8	-2.8	49.2	-1.1	64.3	-1.4
75.4	-1.7	82.2	+3.0	79.3	+1.4	75.4	+1.8	61.2	-0.8	50.4	-2.7	44.7	-1.4	62.5	+0.6
75.4	-2.5	81.4	+1.6	79.4	-0.1	76.0	+1.8	61.2	-2.3	52.2	-1.9	46.2	0.0	63.3	+0.4

ations having ten or more years' record.

